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THE OAK TREE COINAGE OF MASSACHUSETTS

By SYDNEY P. NOE

THE AMERICAN NUMISMATIC SOCIETY

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INTRODUCTION

I*N an earlier work*, The New England and Willow Tree Coinages of Massachusetts,* *a study was presented of the NE coinage of Massachusetts, along with the so-called "Willow Tree" group which succeeded. It was shown that the name "Willow Tree" for this group did not come into use until about 1866, when a distinction between these and the Oak Tree type was made. We need have little doubt that the Pine Tree pieces were so designated from the time of their striking because of the resemblance of their type to the appearance of a pine tree. The Oak Tree pieces may have been so called from their first appearance or shortly thereafter if we may credit the story which is so well-known as hardly to need repeating. As Crosby gives it, Sir Thomas Temple in 1662 "showed . . . some of this money . . . informing the King, in answer to a direct inquiry, that it (the tree on the coin) was a royal oak which had preserved his majesty's life."*

Crosby† *discusses the story at some length and is unable to find any good reason for doubting it. As with the study of the Willow Tree coinage, there is little to add to Crosby's excellent recording of the data. His residence in Boston and his access to the records kept there gave him a tremendous advantage over anyone who does not live at the "hub of the universe." But, although we have no new varieties to add to Crosby's list, we offer one advance not undertaken by him, an attempt at a chronological arrangement made possible by applying numismatic methods of which Crosby apparently did not know. Any judgment of the value of this must be left to the reader.*

One further introductory word is necessary. This monograph would have been much less attractive if the excellent collection of these coins belonging to Mr. T. James Clarke of Jamestown, New York, had not

* *Numismatic Notes & Monographs* No. 102.

† S. S. Crosby, *Early Coins of America*, p. 73.

been available to me. This collection was loaned to the American Numismatic Society for its Exhibition of the Coins of the Americas held in 1942, and permission to photograph and study them at that time was given by their owner. I avail myself of this opportunity to express my warm appreciation for this courtesy. Many of the pieces illustrated are from his collection. When such is not the case, the present ownership of the coin shown is stated. To those who have permitted the photographing of their coins and their inclusion herein, I extend my thanks.

SYDNEY P. NOE

THE OAK TREE COINAGE OF MASSACHUSETTS

IT is reasonable to suppose that Crosby's arrangement for the Oak Tree coinage is chronological, according to his best judgment, but he does not state this directly. His arrangement of the obverses in a numerical sequence supports such an implication. However, his reverse dies, instead of coupling A with his obverse No. 1, start with a reverse D, and then progress in the order C, A, E, B, F, G, H, I. It might therefore be argued with just as much plausibility that he did not intend such an ordering of these dies. It is necessary to make this point clear because his arrangement must be disregarded in our attempt to place the dies in chronological sequence.

There are at least three criteria to be observed in making this attempt:

1. The Oak Tree piece which has the greatest similarity to the latest of the Willow Tree issues is likely to be the earliest Oak Tree issue. If the sole Willow sixpence and threepence are coincidental with the first of the Willow shilling dies, we need not look for close similarity between the Willow and the Oak Tree sixpences and threepences because of the changes which took place in the interval.

2. Among the Pine Tree sixpences, one of the obverse dies has a reverse which was also used for one of the Oak Tree sixpences. This reverse die survived the change from the Oak to the Pine Tree format. It therefore provides a valuable and interesting indication of what the last of the Oak Trees on the sixpences, and, by implication, what those on other denominations struck at the same time must have looked like.

3. No less important an indication is given by the circumstance that the only twopence die in the entire coinage bears the Oak Tree for its type, and is further exceptional in that it alone of all the issues is dated 1662. We are without clear indications of the period of time over which the Oak Tree issues extended, but we should be able to associate issues in the other Oak Tree denominations which are similar in either the form of the tree or the lettering of the inscriptions with this twopence, thereby obtaining a further aid in the arrangement we are seeking to complete. We cannot doubt that the Oak Tree series had been initiated well before 1662. How much it extended after this date will be a matter for consideration in studying the Pine Tree group, although it seems clear that the twopence did not come at the end of the series, for otherwise it would not have had the Oak Tree form but would have been struck with the new Pine Tree type.

Shillings

LET us look at the order indicated by Crosby* to see what we may learn from it. Methods of comparison not perfected in Crosby's day may enable us to make deductions which had escaped him.

The shilling whose obverse is Crosby's No. 1 is coupled with a reverse (D) which is also combined with two other obverses (2 and 3), Plate II. Obverse 1 has two states distinguished by Crosby (1a and 1b). Reverse D therefore had a period of usefulness that equalled that of the obverse dies 1 to 3. This would have resulted if the single reverse die suffered less stress than any of the three obverse dies. If either upper or lower die had received extra support, such as having been set in an anvil, it would have been the reverse D. Furthermore, if we are able to

* Crosby's order may be seen in his "Tables of Varieties of Oak Tree Coins" (*Early Coins of America*, pp. 50–51), which are here reproduced on Plates IX–X.

discover progressive stages of wear in coins struck from this die D, or to watch the growth and development of die-flaws, we may conclude that the strikings from the die with no flaws must have preceded strikings in which these flaws are to be observed.

Fortunately for our purposes there are die-flaws which show such a development as we are seeking. They show conclusively that the order must have been 3-D, 2-D and 1-D rather than the other way around (as Crosby has them). This will be clear if the reverse of his No. 1 (see PLATE II, F, G, H) is examined, for there is a flaw visible between the letters A and N in the position corresponding to four o'clock. Another die-break is to be seen running through the letter D just above (this is a linear break), straight and almost perpendicular to the horizontal diameter of the flan. In 2-D (PLATE II, C, D, E), both of these breaks are less developed, while in 3-D (PLATE II, A, B) they would escape notice if one were not looking for them. If, therefore, we are desirous of making a comparison of the trees on these three dies with those of the Willow Tree series, we must use for our comparing the earliest, i.e., 3-D.

Before we conclude that Crosby intended to place the Reverse D Group with its three mulings at the beginning of the Oak Tree issues, we shall do well to see whether there may have been reasons or conditions other than those we have been considering which interfere with such a deduction. Examination of the Oak Tree shillings as a whole will be necessary for this purpose, and the plates on which they are illustrated will have to be consulted.

One peculiarity stands out immediately. There is shown on PLATE I a second group of three mulings (Crosby's 9-H, 9-I and 9-G—our numbers 1, 2 and 3). In this instance, the obverse die has outlived the three reverses and the best-preserved state of this obverse is found in No. 1 (Crosby 9-H), while the one with the die-flaws most developed is No. 3 (Crosby 9-G). For confirmation compare the obverse letters HV (at three o'clock). Other less

striking flaws occur in the fourth stroke of the letter M and in the third stroke of the letter N. The sequential order then is 9-H, 9-I, 9-G.

But what strikes one as most important in looking at this obverse die is the position of the initial letter M of the inscription. It is at a point corresponding to eleven on the clock. This is the position for this initial M on all the Willow Tree dies. Moreover, this is the only Oak Tree die on which the inscription begins at eleven o'clock. All the others start the inscription between seven and eight o'clock. Does it not follow, then, that this die (Crosby 9), because it follows predecessors of the Willow Tree type in beginning its inscription at this point, when all the other Oak Tree obverses begin elsewhere, must therefore have been the first of the Oak Tree issues?

A further observation, taken by itself, would have little significance, but, when combined with the other conditions we have been considering, comes as striking confirmation. Alone of the Oak Tree shillings, the one which we have placed at the beginning has its reverse die inverted. The other coins have their reverses in such a position that when the piece is turned on its vertical axis, the reverse is in the same upright position as the obverse; both read normally.

A close examination of PLATE I will show why we are justified in placing Nos. 4–7 immediately after Nos. 1–3. The style of the letters and numerals is uniform and the flans are large and well-formed, whereas on the pieces which follow, Nos. 8–14, the letters and numerals differ radically and the flans are constricted. Some day we may find the obverse of Nos. 1–3 combined with an early state of the reverse of Nos. 4–7, and this would be incontrovertible evidence. In the absence of such a combination, it is possible that an interval separated 3 and 4. Our knowledge of where Hull and Sanderson obtained their supply of silver is scanty. It may have been obtained in the

Jamaica market where bullion captured by privateers and pirated was occasionally available. If the silver was obtained there the supply was probably not steady, but intermittent. There is little indication to be found on the coins that the output of the "mint" was regular. The more reasonable conclusion would be that there was no such uniformity. Certainly there seems a wider interval between Nos. 7 and 8 than between 3 and 4. Numerically the surviving specimens of our Nos. 1–7 far exceed the remaining pieces of the Oak Tree form.

There is, moreover, one other condition which supports the arrangement submitted. We have seen that the obverse of Nos. 1–3 outlived three reverse dies and have concluded from this that this obverse die may have been given the support which would come from having been set in an anvil. A like condition prevails with Nos. 4–7 save that now the reverse die is the one which would have had the support of the anvil. Does it not seem that the experience gained with Nos. 1–3 had been applied immediately for Nos. 4–7 as soon as the flaw whose growth is demonstrated on PLATE II had been discovered?

In comparing the Willow with the Oak Tree shillings, we have noted that the coins of the later series are larger and apparently better prepared. Double-striking or triple-striking is a prime characteristic of the Willow Tree coins, and both the inner and outer borders are seldom complete. As a result of the repeated strikings, the coins have a tortured or harried effect which detracts greatly from their appearance. Even in the Parmalee specimen (No. 21 of Monograph 102), which is about as nearly perfect as any Willow Tree shilling, there is a sense of crampedness hard to overlook. In contrast, the Oak Tree shillings strike one immediately as being well-designed and appreciably an improvement over the Willow Tree coins, whether because we have better-preserved specimens to study or, which is more likely, because of their better workmanship.

In the earlier study of the Willow Tree issues, the reader was asked to decide a question of probabilities. A "coining engine" is mentioned in the sale of the effects of John Coney, a silversmith of the generation after that of Hull. Could it be that this had been used by John Hull? Could it be that the obtaining of this "coining engine" by Hull accounts for the improvement to be seen in the Oak Tree shillings?

Putting aside for the moment the question of this "coining engine" and whether it was a screw press, let us look closely at the shilling illustrated on PLATE I, 3. It came to the Society's collection along with other Oak and Pine Tree issues as a gift of Mr. William B. Osgood Field in 1946. Like other surviving specimens of this pair of dies (Crosby 9-G, our No. 3), it is not perfectly struck. Because of this, it possesses evidence lacking elsewhere. The outline of the obverse die is clearly to be seen. This shows at the left as a straight line. A similar line, at right angles, shows below the T of the inscription. Instead of a sharp joining of the two, a third and nearly straight line indicates that the die may have been octagonal or nearly so.

There is no room for doubt that these lines show the edge of the die. Other specimens from this die show small portions of the die's edge; but no other pieces show the die at the top or at the right. The reverse of this piece does show the effect of the off-center striking. Part of the W in NEW is missing, and this missing top is as though sheared off. Further, and this is as it should be, the line of this shearing is no other than that of the edge of the obverse die.

By now, in the light of the foregoing, we may feel safe in concluding that the shape of our die was that of a prism rather than a cylinder. Our next step is to look at the Willow Tree dies. With fewer pieces and multiple strikings, we may be baffled. Fortunately, the specimens at our Museum do provide unmistakable traces to show that the Willow Tree dies were cylindri-

cal. Here, then, is the reason for the improvement in the Oak Tree coinage, and an adequate reason. Whether or not Hull obtained a screw press, and used these dies in such a press, the flattened edges of the dies for the Oak Tree pieces made it possible to hold them firmly in the anvil without rotating; and the impossibility of such a firm hold on cylindrical dies accounts for the double and triple striking which mars the preceding Willow Tree issues. As a consequence of all these conditions, it seems that a new beginning must have been made with the Oak Tree issues, and that it will be vain to look for repetitions of peculiarities in letter forms which mark the earlier series. One might even question whether the making of the dies for the Oak Tree pieces had been entrusted to another engraver.

Since we may now place Crosby's 9-H, 9-I and 9-G (our Nos. 1–3) as the earliest of the Oak Tree group, we may proceed to further comparisons. If the obverse differs from all other Oak Tree types in the beginning point for its inscription, so, too, do all three of the reverses which are muled with it. Elsewhere throughout the Oak Tree shillings, the N of NEW ENGLAND is uniformly placed at eight o'clock (as is the beginning for the obverse inscription). In No. 3 (9-G) the beginning is about one o'clock; for 9-H and 9-I (Nos. 1 and 2), the beginning is at eleven-thirty. Although the engraver follows precedent for the point of beginning of the obverse inscription (M at eleven o'clock), his reverse inscription does not begin at the same point as on the Willow Tree coins.

Another condition worthy of notice is that the use of large letters for the inscription (large in comparison with those of the Willow Trees) has betrayed the engraver into permitting himself too great freedom. As a result, the second variety (No. 2, 9-I) shows that he left insufficient space for the final M in the abbreviation DOM. A rather shamefaced rosette attempts to conceal the omission. With the third attempt (No. 3, 9-G), there

is a crowding of the letters of NEW ENGLAND, with a dilemma as the result; the engraver seems not to know whether to repeat or to repair the error in the preceding die. The undue spreading of the AN DO is the result. It is just such a difficulty as this which may have resulted in establishing the ruling for beginning at a fixed point which we have observed as marking the dies for the rest of the Oak Tree series.

Of Crosby's nine obverses, we have now accounted for four in our first six varieties.

To justify the order submitted on the plates, attention should now be turned to Nos. 13 and 14 (Crosby's 8-F and 7-B). In a notebook of the late Edgar H. Adams, which came into the possession of the American Numismatic Society after his death, there is a note that Dr. Hall had called attention to the identity of the obverse dies of Nos. 13 and 14. I have been unable to determine whether this statement was published, but its correctness will be apparent after examination of the illustrations on PLATE III, despite the radical changes made by the engraver's alterations.

Crosby's die No. 8 (our No. 13) must therefore precede die No. 7 (our No. 14), but this does not explain why No. 14 is placed at the end of the Oak Tree series. To understand this, we must turn to the group of sixpences.

In his table of the Pine Tree sixpences, Crosby* records that the reverse for the variety that he numbers 2 is identical with that used for the Oak Tree issue, 1-D. This die, therefore, is a valuable connection between the Oak and Pine Tree groups and must have come at the end of the Oak Tree series and near the beginning of the Pine Tree issues.

The Pine Tree variety has been shown on PLATE V for comparison and will repay examination. One is struck immediately by the spininess of the branches, a peculiarity in strong contrast

* *Early Coins of America*, p. 56.

with what we have been observing in the Oak Tree coinage, except for our No. 14, where the alterations of the earlier stage of this die exhibit this same spiney treatment. Because this spininess is common to the Pine Tree series and has not been found among the Oak Tree pieces until No. 14 was reached, No. 14 must be placed as the last issue of the Oak Tree shillings. We shall consider the date for this change in examining the twopence which we know was authorized in 1662, the date it bears.

Since Nos. 10–12 comprise varying stages for both obverse and reverse dies, and because of their closer similarity to Nos. 13 and 14 in the use of "shrubs" on either side of the tree trunk, they are placed here. Nos. 8 and 9 fall into place preceding them because of the absence of these "shrubs."

Sixpence

WE have seen that the sixpences provide a link between the Oak and Pine Tree groups. If we needed further evidence that Crosby did not consider his numbering chronological, this variety would provide it, since there would be scant reason for numbering the last of the Oak Tree sixpences 1-D.

The criteria which were helpful with the shillings offer scanty aid with the sixpences. The obverse inscriptions begin at practically the same point, eight of the clock. The reverses are not uniform. No. 22, the latest of them, begins at eight o'clock also, and so do Nos. 16 and 19, but the others begin at two and three o'clock. I am unable to trace any development in the trees on the obverse. In fact, for Nos. 17 and 19 the treatment is so at variance with what we look for as an Oak Tree as to bring doubts of the genuineness of these varieties. No. 15 is unique; it is struck on a flan of shilling weight, but the die is larger than for any other sixpence. It follows the shillings faithfully as to inscription and for that reason may claim the position at the head of the group. Nos. 17 and 18 have identical inscriptions, but the

flans for these are properly smaller. No. 16 omits the word IN from the obverse. No. 19 shows IN for both obverse and reverse and omits DOM. No. 20 omits DOM as well as IN. The use of ANO for ANNO on No. 19 would provide reason for doubting its genuineness were it not that the same spelling occurs on No. 20 and elsewhere. The form of the tree is unusual, especially in the treatment of the roots, and on the reverse the W is unlike any other W's in the coinage. The piece is very questionable. No actual specimen is known to me.

No. 17, whose tree form is also very bad, shows a die defect at eight o'clock on the reverse which occurs on more than one specimen and which must represent an injury to the die.

In view of all these conditions, the order submitted here must be tentative. It may serve as an identifying arrangement until it can be replaced.

Threepence

CROSBY distinguishes six obverse and three reverse dies for this denomination, with one of the reverses recut. The small scale and the nondescript form of the trees offer little in the way of progressiveness in their development. The obverse uniformly reads MASATHVSETS and the reverse NEW ENGLAND. The rosettes are badly executed in several instances and the beaded circles are not quite true. The smallness of the scale seems to have hampered the engraver. The workmanship on the lettering, too, leaves room for improvement. A similar condition prevails with the twopence.

Twopence

BECAUSE the single die for the twopence is dated 1662, the only exception to the 1652 on all other coins in the Willow, Oak and Pine Tree series, its importance is out of all proportion to its size.

Crosby distinguishes two states of the reverse die, but the enlargements on PLATES VI–VIII will show that there is more of a problem than such a division would imply. We have had to resort to enlargements to make the progression clear. The last stage of the die shows the date with large digits for the 1 and for the 2, and these must have replaced smaller figures in the first state. Furthermore, the A and N have serifs in the last stage, while in the first they are very badly formed and are without serifs.

Between the A and the N, a break extends inwards from the outer row of beads in the stage numbered 3. This has involved the letter A and reaches almost to the second 6 of the date. In addition, the horizontal stroke of the 2 has developed a break which connects it with the inner row of beads. The fourth stage shows what the engraver did to meet this situation. We have already noted the enlargement of the first and last digits of the date and the recutting of the A and N with great improvement due to the added serifs. The other letters have all been made heavier. This is also true of the beaded circles but less noticeable. In the last of the enlargements, a fine line crosses the first three digits of the date and extends into the inscription at the left. This seems to be no other than the extension of the break noted at the rim in the earliest enlargement. Note also the flaw within the loop of the second 6. It extends diagonally upwards to the right. This can be traced back through the earlier enlargements and is even to be seen faintly in the first one. It convincingly supports the order that is here submitted.

Alterations such as these were simpler for a small die than for a large one; the letters were never very deeply cut. In this twopence it would seem that the break within the smaller beaded circle had been filed down until the flaw was eliminated. The first three digits were then recut over the old outlines and were somewhat enlarged in the process. The last figure, the 2, has been completely obliterated and was cut in a size that more

nearly matched the other three figures. After retempering, the die was again ready for use.

Did the recutting of this twopence die take place in 1662 or was there an interval? Who shall say? There are no Pine Tree twopences. Certainly the date would not be an impediment to the later use of the dies, if we may judge from the other denominations. Perhaps we shall some day have another hoard which will answer this query, one like the Roxbury Find which we hope to consider with the Pine Tree issues.

DESCRIPTIVE NOTES

Shillings

1. (Crosby 9-H). MASATHVSETS: IN: As on all the Willow Tree dies, the M is at the eleven o'clock position. The letters are well formed and well spaced. The tree fills the field; the trunk is indicated only as far as the lowest branches and is hatched. There are cross-hatchings downward to the right for the roots. On either side of the trunk are small shrubs or shoots. The guideline for describing the inner circle of beads is plainly visible below the M and the faint central point may be seen on most specimens. In contrast to the Willow Tree type, the tree has branches, and their relation to the trunk and to each other is shown.

   Rev. NEWENGLAND: AN · DOM · Within inner circle 1652 / XII. The initial N is at the same beginning point as on the obverse, although it does not follow the Willow Tree type in this regard. The 5 has been cut so that it obliterates the focal point, thereby showing that the two beaded circles may have preceded the other elements of the design. The letters of the inscription are well-formed—the W is perhaps unduly wide. A die-break joining the N and D of ENGLAND is visible on some specimens. Of fifteen pieces examined, two had been clipped. The numerals of the date are excellent in form and spacing.

   T. James Clarke Coll. (Würtzbach No. 20).* 4.70 grams, 72.6 grains.

2. (Crosby 9-I). Die of No. 1.

   Rev. NEWENGLAND · ANDO (rosette). The rosette and its position at eleven o'clock distinguish this die. The central point is plainly visible. The only period in the inscription is high. The W is very broad. The circles of beads are not quite regular.

   T. James Clarke Coll. (Würtzbach No. 21). 4.51 grams, 69.6 grains.

3. (Crosby 9-G). Die of Nos. 1 and 2.

   Rev. NEW ENGLAND · AN DO · The beginning of the inscription is at 1:30 o'clock. No other Oak Tree shilling begins at this point,

* Reference is made here, and following, to the photographic plates of Carl Würtzbach's portfolio, "An Index of Complete Set of Massachusetts Colonial Silver Money. . .," issued at Lee, Mass., in 1937.

but some of the Willow Tree pieces begin at two and three o'clock. The W (seldom clear) is badly formed, and so too are the numerals of the date, especially the 2, which, because of its heavy horizontal stroke, is crude. The flans seem to have been prepared carelessly; of eight specimens examined, four had cleft flans and one had irregular edges. The obverse die seems to have given way at three o'clock, resulting in the reverse inscription not being struck up (at eleven o'clock). The central point is faintly indicated. The linear guide for the inner circle of beads is visible at the top and bottom; the pellets run together at times.

The American Numismatic Society (Gift of W. B. Osgood Field). 4.67 grams, 72.1 grains.

4. (Crosby 3-D). The first period of the inscription is centered, the second one, normal. The center point is clearly visible. The inner circle of beads is irregular; at the top it is almost continuous. The crude exergual line (with hatchings beneath it) ends at the shrub to the right of the trunk. The S's of the inscription vary; the lower part is uniformly the smaller. The second period precedes the M rather than following the N. The shearing away of the die at the top, well above the outer circle of beads, shows in some specimens. The V is disproportionately large.
Rev. NEWENGLAND · AN · DOM · The center point is visible but faint. The beaded circles are irregularly spaced and not quite perfect in shape. The 6 of the date and the X below it are very large. The periods are centered, but the one between AN and DOM is faint, possibly unintentionally. A flaw shows at the center of the O. Another flaw connects the first period with the A, while a third is visible on some specimens above this same A.

Massachusetts Historical Society. 4.61 grams, 71.2 grains.

5. (Crosby 2-D). The tree has two gracefully curved lower limbs and a sturdy trunk. The central point is faint. The inner circle of small beads forms a nearly perfect circle; the outer one is even fainter than the inner (compare both with the reverse forms). The V is large, the first T short. The die seems to have broken at the edge near the top—but see remarks on p. 6 relative to shape of the die, which offer a more probable explanation.

Rev. Die of No. 4. The weakness at the top is apparently due to the obverse condition already noted. The A and N of AN DOM show flaws.

T. James Clarke Coll. (Würtzbach No. 10a). 4.60 grams, 71.0 grains.

6. (Crosby 1a-D). Crosby reads the inscription as without any periods. There seems to be a large but faint one following the N. It is almost invisible because of the die mutilation, due, it is believed, to the dies having been struck without a coin flan between them. Note the center point and discontinuity of inner circle of beads. The serifs of the first T and the H are distinctive, as are also thick strokes in the V, and the tiny irregularity at the middle of the second stroke.

   Rev. Die of Nos. 4 and 5. The flaws already noted show further development, especially the one below the AN, which now projects into the field. The first D has its top portion nearly filled in and other letters (the O, N and L) are defective.

   T. James Clarke Coll. (Würtzbach No. 8). 4.47 grams, 69.0 grains.

7. (Crosby 1b-D). The die of No. 6 with the lower portion recut. The trunk of the tree shows cross-hatching. No center point is visible. The exergual line, at two levels, shows hatchings downward to the right beneath. The letters N.MA have been recut. The inner circle of beads is regularly spaced; it is not possible to compare the outer circle because only one of the specimens available shows a small segment.

   Rev. Die of Nos. 4, 5 and 6. The die-flaws already noticed show further enlargement. A small flaw appears at the extremity of the horizontal stroke of the 2. In later stages of the die, this flaw gradually has grown until it has spread to the second digit of the XII, joining the break below the AN.

   T. James Clarke Coll. (Würtzbach No. 9). 4.63 grams, 71.5 grains.

On PLATE II, the gradual break-up of this reverse die (D) is illustrated in specimens listed below:

A. Crosby 3-D. D. P. Dickie Coll. 4.50 grams, 69.5 grains.
B. Crosby 3-D. Massachusetts Historical Society. 4.53 grams, 69.9 grains.
C. Crosby 2-D. American Numismatic Society. 4.65 grams, 71.8 grains.
D. Crosby 2-D. American Numismatic Society. 4.65 grams, 71.8 grains.

E. Crosby 2-D. C. Würtzbach Coll. 4.53 grams, 69.9 grains.
F. Crosby 1a-D. American Numismatic Society. 4.63 grams, 71.5 grains.
G. Crosby 1b-D. Massachusetts Historical Society. 4.50 grams, 69.5 grains.
H. Crosby 1b-D. T. James Clarke Coll. 4.52 grams, 69.8 grains.

8. (Crosby 5-A). MASATHVSETS · IN · The tree is without the side shrubs and its trunk is without hatchings. Beneath the ground line the hatchings are crossed. No center point is visible. The M, the first A, and the first T are distinctive.
Rev. Crosby reads the inscription as without periods. What appears to be a faint period follows the D of ENGLAND on the T. James Clarke specimen, and there seems to be an indication of one following the M. Both the date and the XII are small. The letters of the inscription are short and squat.
T. James Clarke Coll. (Würtzbach No. 13). 4.62 grams, 71.3 grains.

9. (Crosby 4-C). Inscription punctuated as in No. 8. The tree has an exceptionally wide trunk. The exergue is filled with cross-hatching. The letters of the inscription are so nearly identical (after allowance has been made for their having been deepened in the die) that there seems some ground for believing that this may be a re-use of the obverse of No. 8. Comparing the letters separately almost strengthens this into conviction, when the evidences of recutting have been noted. The tree must have been entirely recut.
Rev. NEWENGLAND · AN · DOM · This die shows a doubled center point. The enclosing circles are wedge-shaped strokes rather than pellets or beads, and the guiding linear circle is plainly visible on some specimens. These merge at the upper right of the inner circle. The letter forms follow closely those of No. 8 in shape, size and position.
T. James Clarke Coll. (Würtzbach No. 12). 4.68 grams, 72.2 grains.

10. Crosby describes two stages of this die and two for the reverse that goes with it (6^a-E^1, 6^b-E^2).* There seem to me to be three distinguish-

* The numbers are incorrectly designated as 1^a-E and 1^b-E^2 in the "Obverses" section of Crosby's table of Oak Tree Varieties; they are correctly designated in the "Reverses" section.

able for each die. These have been numbered 10, 11 and 12. In the earliest stage, the tree is weakly cut. Some of the letters are without serifs—compare the second T and the H with later dies.

Rev. The beaded borders are well formed throughout, but the letters of NEW are weak. Note the poor form of the W and its contrast with the other letters.

The American Antiquarian Society. 4.73 grams, 73.0 grains.

11. The tree is radically recut—apparently erased and done over. The horizontal elements of the E are enlarged and broadened.

Rev. The changed form of the W and of the other letters which follow seem to indicate recutting. Note the double cutting of the second digit of the date.

T. James Clarke Coll. (Würtzbach No. 16). 4.47 grams, 69.0 grains.

12. The die-flaw in the right field was barely visible in No. 11. The inscription has lost its sharpness, a loss due to wear on the die rather than on the coin.

Rev. The center point has almost disappeared. As with the obverse, the die shows wear, especially in the inscription.

The specimens available (three of No. 10, six of No. 11 and four of No. 12) are seldom well preserved, and should better specimens become known, the conclusions submitted may have to be revised.

Damon G. Douglas Coll. 4.49 grams, 69.3 grains.

13. (Crosby 8-F). The center point for describing the beaded circles is incompletely covered by the thin trunk of the tree. For this die the trunk is solid. The ground line is short and the hatchings downward to the left are long. The inner circle of beads is light and dainty; the outer one has a defect at the top over the letters HV. The inscription letters are also light and thin. The second T has a slight defect above it. The third S intercepts the inner circle of beads.

Rev. The center point is visible. The inscription reads AN DOM with the period before the A centered and that following the M in normal position. The inner circle of beads is very light and is faint at the top. The outer circle is also light. The first E is very small. Serifs are often lacking.

T. James Clarke Coll. 4.66 grams, 71.9 grains.

14. (Crosby 7-B). A note by Mr. Edgar H. Adams calls attention to Dr. Hall's statement that these two obverse dies (that is, of Nos. 13 and 14) are identical. Comparison of the letters will show that this is true, although many of them have been deepened by recutting. The defect in the outer row of beads at the top of the die is noteworthy. The tree has been recut and given an appearance which contrasts sharply with the earlier form. The ground line has been strengthened and the entire appearance of the tree changed by the tiny hatchings which modify each of the limbs. A die defect in the right field is pronounced in No. 14 and barely seen in No. 13.

Rev. Die of No. 13 with serifs added to some of the letters of the inscription. The 5 of the date is changed in form. Serifs have been added to the XII and the X has been modified by deepening. The beads of the enclosing circles have been strengthened so that they are now nearer the customary size.

T. James Clarke Coll. (Würtzbach No. 17). 4.60 grams, 71.0 grains.

Sixpence

15. (Crosby 5-A). (The Stickney specimen.) Possibly the first American pattern. This piece was overstruck on an old shilling. The die is nearly as large as those for the shilling. The tree shows the shrubs on either side of the trunk, which grows from a mound-like base. The trunk displays diagonal hatchings downward to the left. The period preceding IN is centered. The rosette following is composed of seven pellets. The center point is visible and the light inner circle shows the guiding line used in its formations. The outer border is also light.

Rev. Inscription NEWENGLAND · AN DOM · The beads of both borders are light. The center point is visible at the lower tip of the 5. The letters LA show die-flaws. The beginning point of the inscription is that of our No. 3.

Bushnell Sale, No. 152.

16. (Crosby 6-F). The word IN is omitted on the obverse. An eight-beaded rosette provides the punctuation. The center point is conspicuous but both beaded circles are light. The tree fills the field well although the side shrubs and the root indications are weak. A nearly horizontal die-flaw extends from the top of the first stroke of the V to

the base of the third stroke of the H and downward into the field. The letter E is distinctive. The obverse is in contrast with the excellence of the reverse.

Rev. IN NEWENGLAND · ANO Note form of rosette. Both circles are composed of regular, well-formed beads. The central point is visible between the 6 and 5. The date is low on the field.

T. James Clarke Coll. (Würtzbach No. 27a). 2.45 grams, 37.8 grains.

17. (Crosby 4-c). The tree has an unusually broad trunk and nondescript branches and roots which are unlike any others in the coinage. There is no central point and the borders are formed of tiny timorous beads which run together; there seems to have been a false start of which indications are visible in the field to the left. As punctuation, there are colons preceding and following the word IN; the first has diamond-shaped periods, the second round ones. The V is unusually broad. Traces of a re-used flan are visible in the best-preserved specimen (in the section of the V).

Rev. NEWENGLAND : AN : DOM · A central point is visible as well as a second inner circle. This circle is made of cross-hatchings rather than of beads. The date is high in the field. Although the letters of the inscription are well formed they differ from others on the Oak Tree sixpences. The die relations for obverse and reverse are different from all other sixpences.

T. James Clarke Coll. (Würtzbach No. 26). 2.33 grams, 35.9 grains.

18. (Crosby 2-B). All specimens examined are poorly preserved. The tree shows a broad trunk and double base line but otherwise is unlike No. 17 or any other Oak Tree sixpence. The treatment of the branches suggests that of No. 14 but the letters of the inscription are entirely different.

Rev. As punctuation, a centered period precedes the word AN and a colon follows the DOM. The die is notable for the distinctive 2 of the date which is closed so as to look like a zero. The date is high on the flan and the VI correspondingly large. The inner beaded circle is very irregular. No central point is visible.

T. James Clarke Coll. (Würtzbach No. 25). 2.33 grams, 35.9 grains.

19. (Crosby 3-E). MASATHVSETS IN (without punctuation). The

tree has root indications, which resemble a coiled serpent, and two tiny twigs to the right. The branches are thicker than usual. No outer circle is visible in the specimen engraved by Crosby, the whereabouts of which is unknown.

Rev. IN NEWENGLAND : ANO : The W has the second and third stroke crossed and resembles two interlaced V's. No outer circle visible in the specimen engraved by Crosby.

Crosby, *Early Coins of America*, p. 48, illus. No. 9.

20. (Crosby 1ᵃ-D). Inscription as usual with centered periods on either side of IN. The center point visible; both circles are true; the beads are regular in size and uniformly placed — those at the top of the inner circle run together. The ground line for the tree is nearly horizontal. There are the customary shrubs on either side of the trunk, which is narrow and in good proportion. The S's are poorly formed and the first one is weakly cut; it does not touch the inner circle. The N is reversed and the second stroke is disproportionately heavy.

Rev. NEWENGLAND · ANO · This die shares with Nos. 16 and 19 the use of the abbreviation ANO. The date is large and the initial digit is short and heavy. Note the W and the out-of-scale L. The center point is to be discerned at the lower end of the 5.

The American Numismatic Society. 2.21 grams, 34.1 grains.

21. (Crosby 1ᶜ-D). A recutting of No. 20 with the first S mistakenly reversed; it now touches the ring of beads.

Rev. Same as No. 20.

T. James Clarke Coll. (Würtzbach No. 24). 2.23 grams, 34.4 grains.

22. (Crosby 1ᵇ-D). The first S is now in its proper form but the recutting has caused an interruption of the inner circle. The M and the A now are joined by their serifs and the form of the M differs slightly from that of No. 21.

Rev. Same as Nos. 20 and 21. This die is also used for one of the two Pine Tree sixpence dies (Crosby 2).

The American Numismatic Society. 2.08 grams, 32.1 grains.

THREEPENCE

23. (Crosby 1-A[1]). The inscription has the three S's reversed and has a centered period preceding the IN and a six-beaded rosette following it. The center point is faint and coincides with the line of the trunk (or branch). The beads of both circles are light and small but fairly regular. The tree fills the field completely; the base line is mound-shaped.
Rev. NEWENGLAND A six-beaded rosette precedes the N of NEWENGLAND. Note form of the W, which is like that in No. 19. Both E's have unusually long top strokes. The date and denomination figures are well formed. The center point is visible. The linear guide for the outer circle is plainly to be seen.
T. James Clarke Coll. (Würtzbach No. 28). 0.94 grams, 14.56 grains.

24. Crosby (2-A[1]). The first S of the inscription is reversed and only the second and third strokes of the N are visible, the I and the first stroke having been eliminated by the rosette. No center point to be seen, but the linear guide for both inner and outer circles is visible. The tree is asymmetrical, the trunk being to the left of the center and the branches rather crude. The whole die is timidly cut.
Rev. Same as No. 23.
T. James Clarke Coll. (Würtzbach No. 29). 1.07 grams, 16.5 grains.

25. (Crosby 3-A[2]). The first S of the inscription is now normal but the rosette is large and rather untidy. A faint center point is visible but the beads of both circles are uneven in size. There is more than the usual space between the E and the T of the inscription. The tree is even more sketchy and nondescript than in No. 24.
Rev. A recutting of No. 24 as indicated by Crosby. Note that a die-break now connects the upper stroke of the E with the W. A recutting of the letters N and G is indicated by double lines and these are visible in some of the other letters. The last two digits of the dates have been modified, as has also the III.
T. James Clarke Coll. (Würtzbach No. 30). 1.05 grams, 16.2 grains.

26. (Crosby 4-A[2]). This is possibly a recutting of No. 25, although the preservation of the specimens available for study did not permit cer-

tainty. The letters show strong resemblances, but the tree is completely different.

Rev. Die of No. 25.

T. James Clarke Coll. (Würtzbach No. 31). 1.01 grams, 15.6 grains.

27. (Crosby 5-B). No center point visible but beads are uniform in size and regularly spaced. The rosette is a jumble of ten beads. The tree has a horizontal base line and two shrubs. There is also the wide spacing between the E and the T which we had noticed in No. 25.
Rev. Note the form of the W. The rosette has six beads. There is strong resemblance to No. 26 in the placing of the letters. No center point is visible and both circles are irregular.
T. James Clarke Coll. 1.05 grams, 16.2 grains.

28. (Crosby 6-c). The tree has a horizontal base line. In form, it resembles that of No 21. The beginning point of the inscription is in contrast with all others of the threepence, but like that of the sixpences, twopences and most of the shillings. The rosette has seven beads.
Rev. The center point is visible. The beads of both circles are uneven in size and irregularly placed. The rosette is a jumble with a large center point. The 2 of the date resembles that of the twopence. The inscription begins at the same point as that of the obverse, which is the same as was used for the twopence.
T. James Clarke Coll. (Würtzbach No. 33). 1.10 grams, 16.9 grains.

Twopence

29–34. (Crosby 1-A^1, A^2, A^3).* MASATHVSETS · IN: A formless tree with "shrubs" on either side of the trunk, and a double base line. Both beaded borders are regular and the central point for describing them is visible. The first S of the inscription is distinctive and the engraving for the die is excellent throughout.
Rev. NEW ENGLAND An eight-bead rosette separates the initial N and the final D. The borders have beads of unequal size; the central point falls between the two sixes of the date. For a discussion of the alterations to this die see p. 11.

* Nos. 29–30 = Crosby 1-A^2, 31 = 1-A^3, and 32–34 = 1-A^1.

The provenance and weights of Nos. 29–34 are as follows:

29. T. James Clarke Coll. (Würtzbach No. 35a). 0.77 grams, 11.9 grains.
30. T. James Clarke Coll. (Würtzbach No. 35). 0.74 grams, 11.4 grains.
31. T. James Clarke Coll. 0.76 grams, 11.8 grains.
32. The American Numismatic Society. 0.65 grams, 10.1 grains.
33. Massachusetts Historical Society. 0.71 grams, 10.9 grains.
34. T. James Clarke Coll. 0.69 grams, 10.7 grains.

PLATES

PLATES

PLATES



1 2 3





4 5 6




7


8

9

A

B

C

D

E

F

G

H



10 11 12




13 14


OAK TREE COINAGE **PLATE IV**

15 16 17

18 19



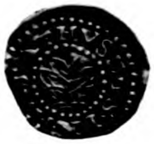

20 21 22 PT.



23 24 25



26 27 28



29

30

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PT.

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TABLES OF VARIETIES OF OAK TREE COINS.

SHILLINGS. — OBVERSES.

Legend and Punctuation. •	Tree. High.	Tree. Wide.	Rings. Grains, Number, Size, &c.	Rings. Inner. Diam.	Rings. Outer. Diam.	Top limb of tree points	Below the roots.	Shrub.	Roots point, &c.	Letters.	Obv.	With Rev.
MASATHVSETS IN	8¼	8¼	51. Medium.	10	17	Between H and V.	N	None.	Many fine, to left.	Large, heavy.	1a	D
MASATHVSETS IN	8¼	8¾	51.? Medium.	10	17	One point each side right foot of H.	N	None.	5. Fine, to right.	Large, heavy.	1b	D
MASATHVSETS ·IN·	8	8	64. Small.	9	16¼	At right foot of H.	N·	Two.	3. Forked, to left.	Large, light.	2	D
MASATHVSETS ·IN·	7	8	67. Connected.	9½	16	At right foot of H.	N·	Two.	Crossing.	Large, medium	3	D
MASATHVSETS ·IN·	8	8	73? Connected.	9½	16	Just left of H.	N·	None.	Crossing.	Small, heavy.	4	C
MASATHVSETS ·IN·	8	7¾	64? Large.	9½	16	At H?	N·	None.	Heavy crossing.	Small, heavy.	5	A
MASATHVSETS ·IZ·	8	7¾	48. Large.	10	16¼	At right foot of H.	Z·	1. To left	Verylight crossing.	Small, heavy.	1a	E1
MASATHVSETS ·IZ·	7¾	7¾	48. Large.	10	16¼	At right foot of H.	IZ·	Two.	None.	Small, heavy.	1b	E2
MASATHVSETS ·IZ·	8¼	7¼	48. Large.	10	16	Just right of H.	?·	Two.	4. To left.	Heavy, forked.	7	B
MASATHVSETS ? ?	8½	8	48. Large.	10	?	Between H and V.	?	Two.	4. To left, heavy.	Medium, heavy	8	F
MASATHVSETS :IN:	8¾	8½	66. Med. on thread.	9½	16	Forked. At M and second A.	ET	Two.	Right.	Medium.	9	G H I

SIXPENCES. — OBVERSES.

Legend and Punctuation.	Tree. High.	Tree. Wide.	Rings. • Grains.	Rings. Inner. Diam.	Rings. Outer. Diam.	Top limb of tree points	Below the roots.	Shrubs.	Roots point, &c.	Letters.	Obv.	With Rev.
MASATHVSETS ·IZ·	6½	6½	43. Irregular. Medium.	7	12¼	At left foot of H, curving to left.	IZ	Two.	Light; point left and right.	Small.	1a	D
MASATHVSETS ·IZ·	6½	6½		7	12¼			Two.			1b	D
MASATHVSETS ·IZ·	6½	6½		7	12¼			Two.			1c	D
MASATHVSETS ? IN·	6	7½	Large, connected.	7½	13	Between T and H.	I	None.	Faint.	Medium.	2	B
MASATHVSETS IN	6	8	57. Medium, close.	8¼	13¼	At H.	N	None.	Circular.	Med., heavy.	3	E
MASATHVSETS : IN:	5¾	6½	Small, connected.	7½	12½	Left of H. Tree tall.	: I	None.	None.	Med., light.	4	C
MASATHVSETS ·IN※	7	7½	Medium, connected.	8¾	14	Between T and H.	N.	Two.	2. Right. 2. Left.	Medium.	5	A
MASATHVSETS ※	6½	7	50. Medium.	7½	12¼	At right foot 2d A.	3d s.	Two.	Right and left.	Large.	6	F

THREEPENCES. — OBVERSES.

Legend and Punctuation.	Tree. High.	Tree. Wide.	Rings. Grains.	Rings. Inner. Diam.	Rings. Outer. Diam.	Tree points	Below the roots.	Shrub.	Roots point, &c.	Letters.	Obv.	With Rev.
MASATHVSETS ·IN ※	4	4½	45. Small, connected.	5	9½	At group.	HV	None.	None.	All Ss reversed	1	A1
·MASATHVSETS ※	4	4½	36? Large, connected.	4¾	9	At M.	HV	None.	3. Left.	1st S reversed.	2	A1
MASATHVSETS ※	3½	3¾	36. Large and small.	5	9	Bet. group and M.	HV	None.	2. Right.	Heavy.	3	A2
MASATHVSETS ※	4	4	36? Medium.	5	10	At M.	HV	Two.	None.	Light.	4	A2
MASATHVSETS ※	4¼	4	30. Large.	5	10	At M.	HV	Two.	Left.	Heavy.	5	B
ATHVS ? ?	?	?	Medium.	5	?	At T H.	Group?	?	?	Small.	6	C

TWOPENCE. — OBVERSE.

Legend and Punctuation.	Tree. High.	Tree. Wide.	Rings. Grains.	Rings. Inner. Diam.	Rings. Outer. Diam.	Tree Points	Below the roots.	Shrub.	Roots point	Obverse.	With Reverses.
MASATHVSETS· IN:	3¾	4¼	26. Large, round.	4½	8½	At H.	N:	Two.	Left	1	A1 A2 A3

SHILLINGS. — REVERSES.

Legend and Punctuation.	Centre Marks.	Diam. Rings. Inner.	Diam. Rings. Outer.	No.	Grains of Inner Ring. Size, &c.	Below XII.	Letters.	Date.	Numerals.	Reverse.	With Obverse.
NEWENGLAND AN DOM	Small.	9¼	15¾	61?	Medium, irregular.	DO	Low, irregular.	Light.	Small.	A	5
NEWENGLAND · AN DOM .	None.	10	16	52	Large.	OM .	Heavy, irregular.	Medium.	Heavy.	B	7
NEWENGLAND · AN · DOM·	Two.	9¼	15¼	70?	Large, connected.	DO	Small, heavy.	Medium.	Heavy.	C	4
NEWENGLAND · AN · DOM·	Small.	9¼	16¼	68	Medium, close at top.	OM	Large, medium.	6 large.	Large.	D	1a 1b 2 3
NEWENGLAND · AN · DOM .	Large.	10	16	52	Large, regular.	OM .	Small, medium.	1 heavy.	Heavy.	E1	6a
NEWENGLAND · AN · DOM .	None.	10	16	52	Medium.	OM .	Small, medium.	Light.	Light.	E2	6b
NEWENGLAND? AN? DOM?	None?	10	?	52	Medium, irregular.	OM	?	Medium.	Large.	F	8
NEWENGLAND · AN · ?	Very small.	9¼	16	67?	Small, connected.	GLA	Medium.	Large.	Large.	G	9
NEWENGLAND : AN• DOM·	Joins 5.	9¾	16	69?	Medium, connected.	ND:	Large, medium.	Medium.	Large.	H	9
NEWENGLAND? AN? DO⁘	Large.	10	15¼	70?	Med., many connected.	1st AN	Large, medium.	Large.	Medium.	I	9

SIXPENCES. — REVERSES.

Legend and Punctuation.	Centre Marks.	Diam. Rings. Inner.	Diam. Rings. Outer.	No.	Grains of Inner Ring. Size, &c.	Below VI.	Letters.	Date.	Numerals.	Reverse.	With Obverse.
NEWENGLAND· AN DOM·	None.	9	14		Medium, connected.	LA	Medium.	Central.	Low.	A	5
NEWENGLAND? AN? DOM	?	7½	13		Large, connected.	EN	Medium.	Very high,	Large.	B	2
NEW : ENGLAND : AN : DOM :	Small.	7½	13		Small, connected.	2d N	Light.	High, light.	Light.·	C	4
NEWENGLAND· A NO·	Joins 5.	7	12		42. Large.	NO	Heavy.	52 larger.	Small.	D	1a 1b 1c
IN NEWENGLAND : ANO :	?	8½	None		57. Medium.	2d N	Large.	Large, cent'l	Low.	E	3
IN NEWENGLAND· ANO⁘	Bet. 5 & 6.	7½	12½		52. Medium.	NO	Medium.	16 larger.	Low.	F	6

THREEPENCES. — REVERSES.

Legend and Punctuation.	Centre Marks.	Diam. Rings. Inner.	Diam. Rings. Outer.	No.	Grains of Inner Ring. Size, &c.	Below III.	Letters.	Date.	Numerals.	Reverse.	With Obverse.
NEWENGLAND⁘	Small.	5	9½		43. Small.	GL	Medium.	Large.	Heavy.	A1	1 2
NEWENGLAND⁘	Small.	5½	9¼		38. Medium.	GL	NG double lined.	2 heavy.	Irregular.	A2	3 4
NEWENGLAND⁘	?	5¼	9¾		36? Some double.	GL	Medium, irregular.	Medium.	Light.	B	5
NEWENGLAND⁘	Large.	5	9¾		30. Large.	D ◆	Small, heavy.	Small.	Heavy.	C	6

TWOPENCE. — REVERSE.

Legend and Punctuation.	Centre Marks.	Diam. Rings. Inner.	Diam. Rings. Outer.	No.	Grains of Inner Ring. Size, &c.	Below II.	Letters.	Date.	Reverse.	With Obverse.
NEWENGLAND⁘	None.	4¾	8¼		28. Large below, close above.	Group.	Small, heavy.	1 large, 2 full size.	A1	1
							Crack over A.	1 light, 2 very small.	A2	1
							Crack from A to 2.	Small, heavy.	A3	1

(Reproduced from Crosby's "Early Coins of America," pp. 50-51)

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NUMISMATIC NOTES AND MONOGRAPHS

No. 111

EARLY ARABIC GLASS WEIGHTS AND STAMPS

By GEORGE C. MILES

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET, NEW YORK
1948

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PREFACE

AMONG the most interesting and valuable minor epigraphical documents of the early Muslim Arabs are the glass weights and vessel stamps issued first by officials of the Umayyad and ʿAbbāsid dynasties chiefly in Egypt, and later by their successors the Fāṭimids, Ayyūbids and Mamlūks. In the Museum of the American Numismatic Society there is an exceptionally fine collection of these remarkable weights and stamps, numbering in all some 1,750 pieces. Of these the greater number are of Fāṭimid and subsequent times, but of the especially interesting and historically important early period, that is of the end of the first to the early third centuries of the Ḥijrah (early eighth to middle ninth Christian centuries) there are over two hundred pieces, and it is these which are described and illustrated in the present volume.

Nine of the pieces here published were briefly described forty-five years ago by J. B. Nies in the Proceedings of the American Numismatic Society. The rest, very largely from the collection of the late Edward T. Newell, have never been published. While the present collection contains a number of duplicates of pieces described in earlier publications, there is much new material, and it is to be hoped, especially in view of the inaccessibility of the previous works on the subject, that this study may be of use to archaeologist, historian and collector alike.

I am indebted to the Metropolitan Museum of Art in New York, particularly to Dr. M. S. Dimand, Curator of the Department of Near Eastern Art, for permitting me to include in this publication several pieces in that museum; and to the Assistant Curator in the same department, Miss Hannah E. McAllister, who has provided me with photographs of these pieces and their weights.[1]

[1] I have also included one stamp (No. 72) which I saw at Stack's in New York about 1938 and which the Messrs. Stack kindly allowed me to copy.

My great indebtedness to Dr. Frederick R. Matson of the Armstrong Cork Company, Lancaster, Pennsylvania, for his important contribution to the study of the manufacture and composition of the glass weights and stamps, will be readily appreciated by the reader. Whatever value the work may possess as a whole has been, I feel, greatly enhanced by the presence of Dr. Matson's chapter which should be of particular interest to Islamic archaeologists and to glass and ceramics historians.

I should also like to record here my appreciation of the willingness of Mr. Robert J. Leavy, Mr. Douglas Carson, and his assistant Miss Mona Tjader of the Steuben Glass Company, New York, to discuss with me, previous to Dr. Matson's collaboration, certain technical aspects of the manufacture of the glass.

Finally I wish to express my most sincere thanks to my colleagues on the staff of the Museum of the American Numismatic Society for their assistance in many ways, especially to the Editor, Mr. Sawyer McA. Mosser, for his pains with the manuscript and with many editorial problems, and to Mr. William L. Clark for the care with which he has prepared the photographs.

THE TYPES, EPIGRAPHY AND METROLOGY OF EARLY ARABIC GLASS WEIGHTS AND STAMPS

FOUR distinct classes of glass objects are described in the present volume: (*a*) coin weights, (*b*) heavier weights, that is ounce and pound weights, (*c*) vessel stamps, and (*d*) amulets or tokens. Since the majority of these weights and stamps are attributable to the specific government officials who issued them, it has appeared most convenient to make the main divisions of the catalogue, so far as is possible, chronological, that is to arrange the pieces of all classes according to the officials in their successive order. There are obvious advantages in this historical arrangement, which, it is hoped, will outweigh the sacrificed advantages of main classification by types. It has been necessary, however, to revert to the type arrangement in dealing with a number of pieces which are anonymous or unattributable to known individuals. The following categories, of which the first comprises by far the more important half of the total, have resulted:

I. Umayyad and ʿAbbāsid Officials
II. Unidentified Officials
III. Anonymous Coin Weights
IV. Heavy Weights—Anonymous or with Names Effaced
V. Vessel Stamps—Anonymous
VI. Vessel Stamps—Illegible
VII. Private Weights and Stamps
VIII. Anonymous Amulets or Tokens

Under each official in categories I and II the pieces are arranged in the following order: *dīnār* and *dirham* weights, *fals* weights, pound and ounce weights, vessel stamps. A biographical note[2] relating to the official in question, together with a

[2] Wherever possible I have cited Grohmann's *Corpus Papyrorum Raineri* as chief authority for dates of office. Grohmann has exhaustively consulted

corpus of all known stamps, weights and coins on which his name appears, will be found at the end of each section. Some officials appear as subordinates to Caliphs or Governors, and also independently as Governors or Prefects. Thus the name of Ibrāhīm b. Ṣāliḥ, for example, occurs on Nos. 92–93 issued by the Caliph al-Mahdi, while on No. 105 he appears as the principal functionary. The biography of such an official will be found following the section devoted to him, and a cross-reference will direct the reader from the first occurrence of his name to the page on which his biography appears.

Contrary to the, in the main, historical order of the text, the plates, for technical reasons, have been arranged according to types. This arrangement should, incidentally, assist collectors whose limited familiarity with Arabic epigraphy may cause them to work in the first instance from the plates to the text.

A key to the abbreviations used in referring to the published works cited in this introduction and in the catalogue will be found on pages 159–160.

The following pages are devoted to a brief discussion of the various classes and categories listed above.

1. General. Coin Weights.

According to the Arab tradition it was during the reign of the Umayyad Caliph ʿAbd al-Malik (65–89 A.H.) that the advice was given, and presumably acted upon, to issue weights (*sanajāt*) of glass (*qawārīr*) for the purpose of testing coins, the idea being that the glass would not be "susceptible of al-

all the pertinent Arab historians (an immense task), sifting and weighing conflicting evidence and arriving thus at the most judicious conclusions possible. Even to endeavor to duplicate the labors of a preëminent Arabist would patently be a waste of time. Naturally, where an official does not receive notice in Grohmann's work I have turned to the original sources, but I cannot pretend to any comparable exhaustiveness in combing the chronicles nor to the required competence to handle the resultant material.

teration either by augmentation or by diminution," in that any tampering would be easily detected.[3] The clipping of coins has, of course, been a common practice from the earliest times until the introduction of modern collars and milling, and thus coins were more frequently accepted by weight than by number. The glass weight enabled the merchant or money-changer to establish with remarkable accuracy whether a coin was up to standard. Debasement was another factor which could be established by the weights.

The notion implicit in the accounts of the Arab historians that glass weights were an Umayyad invention is, of course, incorrect: there was, as with the early Islamic Arab coinage, a Byzantine model.[4] It is likely that the association of ʿAbd al-Malik with the institution of the reformed coinage has been assimilated to the tradition of the introduction of the glass weights. At all events we know from the evidence of the pieces themselves that in the second half of the first century of the Ḥijrah (and before ʿAbd al-Malik) glass coin weights were being manufactured in Egypt with the names of the governors who authorized them.[5]

[3] Muḥammad b. Mūsā al-Damīri, *Ḥayāt al-Ḥayawān*, I, p. 59; transl. A. S. G. Jayakar, *Ad-Damîrî's Ḥayât al-Ḥayawân*, Bombay, 1906, I, p. 128. I believe an earlier statement to this effect is to be found in Ibrāhīm b. Muḥammad al-Bayhaqi's *Kitāb al-Maḥāsin*, ed. Schwally, pp. 501 f., but I have not seen the passage. Cf. Sauvaire, *Matériaux*, I, p. 30; Lavoix, *Préface*, p. xxiv; *Fouquet Collection*, p. 350; J. Walker, *s.v. sanadjāt*, in the *Encyclopaedia of Islām*, Supplement. Cf. also Muqaddasi's remarks, bearing on the Fāṭimid period, quoted by Lane-Poole, *BM*, p. vii.

[4] Cf. Petrie, pp. 1–3; Ettinghausen, p. 74. See also p. 68, below.

[5] The earliest in the present collection are those of Qurrah b. Sharīk (90–96 A.H.: 709–714 A.D.). Stamps (not coin weights) of the Caliph Yazīd (60–64 A.H.) are known (*Fouquet Collection*, p. 366, No. 95; Petrie, No. 86). I believe that the piece attributed to the Governor ʿUqbah b. ʿĀmir, Governor in 44 A.H. (*Fouquet Collection*, p. 373, No. 166; cf. Petrie, p. 3), should be rejected: the reading is questioned by Casanova himself, it is not illustrated, and

It is unnecessary here to review the history of early European research in this field. The mistaken definition of glass weights as "glass coins," the correct identification by Castiglioni as early as 1847 and later by Rogers toward the end of the last century, and subsequent progress in the field, have been adequately described in the existing literature.[6] Since Rogers' contributions placed the study of glass weights on a firm footing four important collections have been published: the British Museum (Lane-Poole), the Fouquet Collection (Casanova), the Vienna Collections (Grohmann), and the University College Collection (Petrie). Other pieces, published in scattered books and articles, are referred to here and there in this introduction and in the catalogue.[7] Lane-Poole, by reason of the material he had in hand, dealt mainly with the coin weights and built well on the foundation which Rogers had laid; Casanova made new contributions to the study of the vessel stamps; Grohmann dealt admirably with the several categories, although the collections described by him were not especially rich in the earlier weights and stamps. The University College Collection is large and contains much important material in all classes.[8]

There are three main types of early glass coin weights: *dīnār*, *dirham*, and *fals*.

2. Dīnār.

The legal weight of the reformed *dīnār* of 'Abd al-Malik

the Qur'ānic quotation which appears on the piece was probably not in use until the time of the 'Abbāsid Caliph al-Manṣūr.

[6] Cf. especially Grohmann, *Arabische Eichungsstempel*, and J. Walker, *op. cit.*

[7] The most complete bibliography of the whole subject accompanies Walker's article in the *Encyclopaedia of Islām.*

[8] The revered Petrie's work is, I am reluctant to say, not altogether reliable and must be used with discretion. Intimate acquaintance with the book reveals many errors. Among other things I find it difficult to accept many of his attributions based on style; and his handling of the Arabic leaves one without confidence.

has been estimated at 4.25 grams.[9] Most specimens of the Umayyad and early 'Abbāsid periods today weigh between 4.22 and 4.28 grams. Under al-Mahdi and Hārūn al-Rashīd they were not up to standard and began to fall off to about 4.10–4.20 grams. As for the early glass *dīnār* weights, they show remarkable uniformity. Lane-Poole found those in the British Museum to average 65–66 grains, that is 4.21–4.28 grams; Petrie's graph shows an average of about 65.3 grains, that is 4.23 grams. In the present collection ten intact *dīnār* weights average 4.21 grams, none exceeding 4.25 grams or falling below 4.13 grams, and showing no appreciable depreciation during or after the time of al-Mahdi. In other words, allowing for slight wear through the centuries since their manufacture, the glass weights were remarkably close to the legal standard.

3. One-half Dīnār.

The one-half *dīnār* should legally weigh 2.125 grams. This denomination is quite rare, but those specimens which I have weighed or have seen published average about 2.11 grams. The preserved weights, more common than the coins themselves, are again extraordinarily uniform, even more so than the *dīnār*. Twelve in the British Museum weigh 33 grains (2.1384 grams) each.[10] Those published by Petrie vary micrometrically between 32.51 and 32.667 grains. Ten intact specimens in the present collection average 2.107 grams, the lightest weighing 2.08 grams, the heaviest 2.12 grams.

4. One-third Dīnār.

The one-third *dīnār* should legally weigh about 1.42 grams, but it seems generally to have been heavier. It is somewhat more common than the half. Eleven specimens that I

[9] Cf. E. v. Zambaur, *s.v. dīnār*, in the *Encyclopaedia of Islām*.

[10] There appears to have been a uniform error, on the side of excess, in weighing these pieces.

have weighed average 1.43 grams, none falling below 1.42 and one weighing as much as 1.45 grams. As for the glass weights, seven in the British Museum are uniformly 22 grains (1.42 grams); those in the University College Collection weigh between 21.65 and 21.727 grains (about 1.40–1.41 grams). Six intact specimens in the present collection average 1.425 grams, with the minimum 1.41, the maximum 1.43 grams.

5. Dirham.

To judge by calculations based on the statements of Arab historians the legal weight of the reformed *dirham* was 2.97 grams.[11] Actually most specimens of Umayyad and early ʿAbbāsid *dirhams* fall between 2.70 and 2.90 grams, seldom reaching the theoretical 2.97. The glass weights, however, are closer to this estimated legal figure: those in the British Museum are mostly 46 grains (2.98 grams); two in the Fouquet Collection are 2.83 and 2.87 grams; four in the University College Collection average 43.97 grains (about 2.85 grams). There is only one intact *dirham* weight in the present collection, weighing 2.92 grams.

6. Fals.

The *fals* denomination presents certain complexities. In the first place there seems to have been no uniform standard of weight for the copper *fals*: it varied in size and weight throughout the Umayyad and early ʿAbbāsid dominions, the issues being local ones in the many cities where they were minted.[12] Although theoretically in early Islamic times there was a 48-to-1 relationship between the *fals* and the *dirham*, in practice *fulūs* in different provinces and cities had different values and varying purchasing power.[13] Thus we may expect

[11] Cf. E. v. Zambaur, *s.v. dirhem*, in the *Encyclopaedia of Islām.*

[12] Cf. E. v. Zambaur, *s.v. fals*, in the *Encyclopaedia of Islām.*

[13] Cf. Sauvaire, *Matériaux*, I, pp. 108–121, where the remarks of Arab historians with respect to the *fals* are assembled.

a number of *fals* multiples and fractions in the glass weights. Furthermore, *fals* (*fulūs*) was not, and is not, a word exclusively meaning a copper coin; it also meant, generically, "money." It will be noted that there are glass weights for "great *fals*," for *fals* without qualification, and for *fulūs* of wide weight range calculated in terms of so-and-so many *kharrūbahs* or *qīrāṭs*. A plausible explanation of the use of these *fals* weights was well put by Lane-Poole in the *BM* Catalogue:

"What then was to be tested with these glass weights of so many ḳeeráṭs or kharroobehs? Not deenárs or dirhems, since only two or three of these weights approximate the standards of deenárs and dirhems; moreover, these coins have standard glass weights of their own, specified as such. Again, testing an individual copper coin or fels by these standard weights would be useless, since the fels is very variable in weight, generally much worn and clipped, and sometimes intentionally cut into quarters. The fels, moreover, was usually passed by weight, not by number; and one is forced to the conclusion that these glass standards were used by the merchant to test the weight in copper of a certain number of *fuloos*, when offered for goods. This theory would account for the numerous varieties of weight employed, as indicated by the figures 9, 14, 15, 20, 25, 27, 30, 32, 33, kharroobehs or ḳeeráṭs. The merchant is selling, let us suppose, a piece of cloth for two dirhems and a half, and the buyer has no half-dirhem, but tenders copper fuloos instead. These fuloos are of varying size and weight, but the proportion of copper in kharroobehs to the dirhem at the given time is of course known, and the merchant would proceed to weigh the required number of fuloos by his standard glass weight of so many kharroobehs."[14]

Lane-Poole's suggestion was close to the mark, but I believe that the true explanation is to be found in the necessity for payments of *dīnār* fractions smaller than halves, thirds and

[14] *BM*, pp. xiv–xv.

quarters. The evidence is in the papyri where we find such fractions expressed in terms of *qīrāṭs*. For example, a contract for the engagement of a *farrāsh* for a mosque stipulates that his wages of 3½ *dīnārs* annually is to be paid at the rate of 7 *qīrāṭs* monthly;[15] a debt contract calls for the payment of ⅙ *dīnār* in 2 *qīrāṭ* installments;[16] and numerous other documents call for fractional payments in *qīrāṭs*.[17] Thus the *fals* weights would have been used to weigh out bits of gold or the equivalents in silver and copper, according to the established standard (which, naturally, fluctuated a great deal). It has already been observed, on the evidence of tax-receipts, that *dīnār* fractions were usually paid in silver.[18] The common unit of the *dirham* was the *ḥabbah* or grain, a smaller fraction than the *kharrūbah* or *qīrāṭ*;[19] but that *kharrūbahs* were sometimes used in connection with *dirhams* is evidenced by the glass weights; and *ḥabbahs* sometimes, but apparently rarely, occur as fractions of *dīnārs*.[20]

Petrie's suggestion[21] that the *fals* weights were used for testing the weight of gold and silver coins of foreign origin, which in early Arab days doubtless circulated in Egypt in large quantities, is reasonable; nor does the explanation offered above exclude the possibility of this use.[22]

[15] Grohmann, *Egyptian Library*, II, pp. 104–105, No. 97.

[16] *Ibid.*, II, pp. 109–110, No. 98.

[17] *Ibid.*, III, pp. 202–203, and *passim*.

[18] Karl W. Hofmeier, "Beiträge zur arabischen Papyrusforschung," in *Der Islam*, IV, 1913, pp. 97–120; cf. D. S. Margoliouth, *Arabic Papyri*, p. xiii, and Grohmann, *Egyptian Library*, III, p. 200.

[19] Cf. E. v. Zambaur, *s.v. ḥabba* in the *Encyclopaedia of Islām*.

[20] Cf. Grohmann, *loc. cit.*

[21] Petrie, p. 10.

[22] The disappearance of the *fals* weights after the middle of the eighth century (see below) might lend weight to Petrie's suggestion, for by the time of the Caliph al-Manṣūr the 'Abbāsid coinage had grown tremendously in vol-

The words *kharrūbah* and *qīrāṭ*, virtually synonymous, are respectively the Roman *ceratonia siliqua* and the Greek *κεράτιον*, the carob seed.[23] Various values in terms of grams have been given to the *kharrūbah* and *qīrāṭ*, ranging from 0.212 grams for the theoretical weight in relation to the values of gold and silver in 'Abd al-Malik's monetary reforms,[24] to 0.20, 0.196, 0.194, or 0.189 grams, these latter values having been derived by calculations based on a limited number of the glass weights themselves.[25]

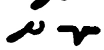
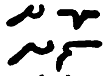
In the table on page 10 it will be seen that I have arrived at an empirical figure of .1968 grams for the weight of the *kharrūbah*. The calculations are based on the intact and relatively unworn specimens published in the present collection, the British Museum, Rogers contributions, the Fouquet Collection, the University College Collection, and (for the 30-*kharrūbah* weight only) Jungfleisch's article. My method has been first to take the average of all the acceptable weights of each denomination, then to reduce each average to the 1-*kharrūbah* unit, and finally to calculate an average of these latter averages. A recalculation, based on the derived value of .1968 gram for one *kharrūbah*, gives in column 5 a theoretical value for each multiple (including multiples that have not yet been met with on glass weights) that should be approximately correct. It must be remembered, however, that

ume and currency, and foreign coins had doubtless largely disappeared from the market.

[23] Cf. E. v. Zambaur, *s.v. kharrūba* and *ḳīrāṭ* in the *Encyclopaedia of Islām*; also, for the Arabic literary sources, Sauvaire, *Matériaux*, I, pp. 102–105; II, pp. 269–273, 420–421.

[24] E. v. Zambaur, *s.v. ḳīrāṭ* in the *Encyclopaedia of Islām*; cf. Casanova, in *Mélanges Schlumberger*, p. 299, who arrives by practical methods at a theoretical 0.2015 grams. But these weights do not conform to the facts as established by the glass weights.

[25] *BM*, p. xiv; the two cited articles of Zambaur's in the *Encyclopaedia of Islām*; Petrie, p. 10; Casanova, *Mélanges Schlumberger*, p. 300.

No. of kharrūbah or qīrāṭ	*No. of specimens*	*True average weight*	*True weight of 1 kharrūbah based on col. 3*	*Theoretical weight derived from col. 4*
9	2	1.76	.1955	1.770
10				1.968
11				2.165
12	2	2.315	.1929	2.362
13	5	2.504	.1926	2.558
14	1	2.790	.1999	2.755
15	3	2.993	.1995	2.952
16				3.149
17	2	3.31	.1947	3.346
18	4	3.600	.2000	3.542
[19	2	5.275]	—	3.740
20	10	3.943	.1971	3.936
21				4.133
22				4.330
23	3	4.350	.1891	4.526
24	6	4.655	.1935	4.723
25	5	5.048	.2019	4.920
26				5.119
27	3	5.253	.1972	5.314
28				5.510
29				5.707
30	14	5.841	.1947	5.904
31				6.101
32	5	6.188	.1933	6.298
33	2	6.405	.1939	6.494
34				6.691
35				6.888
36				7.085
	10	5.797	.1932	5.904
	4	6.385		6.494
	1	6.99		7.085
fals	3	5.786		5.904
Average weight of kharrūbah			.1968	.1968

all specimens, even though intact and almost perfectly preserved, must have suffered some slight loss through wear or chipping. Incidentally it will be noted that the over-all average of .1968 closely approximates the averages for the cate-

gories in which we have the largest number of well-preserved specimens, *i.e.*, 20- and 30-*kharrūbah* pieces.[26]

Included in the above calculations are the *fals* weights bearing the symbol . It is apparent from the very uniform weights of these (all of them from 5.77 to 5.82 grams) that the multiple is 30. The sign appears to be the Coptic figure derived from the Greek λ,[27] which of course signified 30 in the Byzantine coinage.[28] A few pieces with the signs [29] seem to work out at approximately 33 *kharrūbahs*, and those with [30] perhaps at 36. The simple *fals* or "great *fals*"

[26] In the Museum of the American Numismatic Society there is a handful of carob seeds (ninety-five of them to be exact), presented to the Society by J. B. Nies, presumably at the time of his bequest of glass weights. I have a faint recollection that the late Howland Wood once told me that Dr. Nies had acquired these carob seeds in Egypt when he purchased the glass weights and stamps, some of which are described in the present catalogue. I have weighed nine lots of these seeds, in groups of ten each, with the following results: the lots range from 1.770 to 2.050 grams, the average working out at 1.9455 grams. In other words, the average weight of one of these *kharrūbahs* is .19455 gram. It is of interest to note that this is only $\frac{23}{100}$ of a gram lighter than the weight arrived at in the table above.

[27] *Fouquet Collection*, pp. 352–53 (the weight 5.85 given here does not correspond to that in the catalogue, p. 383, No. 68); *Mélanges Schlumberger*, p. 297: "c'est le chiffre copte, dérivé du λ grec, dans lequel le trait antérieur est prolongé en bas et le trait postérieur fortement recourbé." The use of the Coptic and Greek figures in connection with tax-receipts and other financial documents preserved in the Arabic papyri is common: cf. especially Karl W. Hofmeier, "Beiträge zur arabischen Papyrusforschung (I, Das System arabischer Steuerverrechnung im 9. Jahrhundert v. Chr.)," in *Der Islam*, IV, 1913, pp. 97–120; and Margoliouth, *Arabic Papyri*, pp. 130 ff.

[28] As for example under Heraclius; cf. Warwick Wroth, *Catalogue of the Imperial Byzantine Coins in the British Museum*, I, p. lxxxii.

[29] *Fouquet Collection* and Petrie. There is also one of 'Umar (seen too late to include in the calculations), weighing 6.08 grams, in the Museum of Fine Arts, Boston. See section II, I of the catalogue.

[30] *Fouquet Collection* (slightly fractured) and No. 68 in the present collection, weighing 6.99 grams.

appears to have been of 30 *kharrūbahs*, although the three anonymous *fals* weights in the present collection (Nos. 133, 142–143) are much underweight with respect to this value. They have not been included in the calculations above. The weights of 19 *kharrūbahs* are abnormal and present epigraphical peculiarities.[31]

The earliest datable *fals* weights were issued by Usāmah b. Zayd at the end of the first century of the Ḥijrah, the latest by Muḥammad b. al-Ash'ath (141–143 A.H.).[32] Thus sometime shortly after the middle of the eighth century the practice of using glass weights to weigh out multiples of *kharrūbahs* appears to have been given up. If the theory proposed above with regard to the use of these weights is correct there remains the question of the method of payment of fractions of *dīnārs* and *dirhams* after the *kharrūbah*-multiple weights were abandoned.[33] The possibility of the standardization of the *fals* with respect to the gold and silver might be investigated.

7. Heavier Weights.

There are two types of heavier glass weights: "disk-weights" and "ring-weights." These names require definition since they are of my own creation. While they are perhaps not entirely satisfactory they are reasonably descriptive of the shapes. The disk-weight (largely for ounces and fractions, but sometimes for fractions of pounds) is an oval, or sometimes roughly circular, plano-convex disk with a stamp bearing the inscription sunk into the convex surface. Petrie calls

[31] *BM* and No. 71, *infra*.

[32] Salamah, who issued *fals* weights, cannot be definitely identified with Salamah b. Rajā' (161–162 A.H.): see pp. 127–128.

[33] Accounts in large fractions of *dirhams* are known: *e.g.*, Albert Dietrich, "Arabische Papyri aus der Hamburger Staats- und Universitäts-Bibliothek," in *Abhandlungen für die Kunde des Morgenlandes*, XXII, 3, Leipzig, 1937, pp. 41–49.

this type "bun-shaped."[34] I would have used the term "bun-weight" if it did not suggest more convexity than the type usually has. The ring-weight (for pounds and its multiples) is shaped somewhat like a doughnut.[35] In other words, it is a slightly rounded cuboid with a hole in the center, bearing one or more stamps on the top surface or on one of the sides. Most of these ring-weights are fractured horizontally along a plane running across the hole, and lack the lower portion of the mass. A good illustration of a completely preserved weight of this type is No. 110. The purpose of the hole, I believe, was to enable the merchant to suspend the weight on the scales, or perhaps to provide a convenient method of storing it on a peg or a hook. On some of the pieces in the present collection the signs of wear caused by a cord or chain are clearly evident on one side of the hole.

8. Raṭl.

The word *raṭl* means "pound." The Arabic literary sources abundantly testify to the multitudinous *raṭl* standards at different times and in various parts of the Islamic world.[36] One has only to consult Sauvaire's remarkable collection of material to gain an idea of what confusion exists. There are *raṭls* ranging in weight from 102 and a fraction to 7,700-odd *dirhams*, that is, according to Sauvaire's calculations, from 317

[34] Petrie, p. 4. Jungfleisch uses the term "*ratl* discoide en verre."

[35] The similarity was first suggested to me by Miss Hannah E. McAllister. "Bun-weight" and "doughnut-weight" would have been two pleasingly complementary names, but aside from the suggestion of frivolity the more serious objection might be interposed that the doughnut is not a universally familiar phenomenon. Also there is no Anglo-Saxon unanimity with respect to the shape and ingredients of a bun.

[36] Anyone who has traveled in the Near or Middle East knows how even today there are numerous local standards of weight and measure differing from the standards for the same commodity in a town or region not very far distant.

to 23,835 grams.[37] The commonest *raṭl* that may be considered applicable to the glass weights is one of 128 or 128 4/7 *dirhams* (or 130, according to some sources), apparently equivalent to something in the neighborhood of 395 to 408 grams. Actually the status of the legal *raṭl* with its variants is so confusing that no effort will be made here to reconcile the literary sources with the facts as they relate to the glass weights. It may, however, be useful to the student of metrology to set forth here the weights of the relatively well-preserved glass *raṭls* and fractions contained in previous publications and in the present collection. Only those specimens which are virtually intact are included, but it must be remembered that even these have lost weight through chipping, wear and disintegration.[38]

	SPECIMEN	WEIGHT
raṭl	Jungfleisch (Louvre)	437.0 grams
	Jungfleisch	433.67
	Jungfleisch (Cairo)	431.87
	ANS No. 110	398.53+
	Walters Art Gallery[39]	337.55
½ *raṭl*	Damascus Museum[40]	175.5
¼ *raṭl*	Petrie No. 174	233.46+
	Petrie No. 175	187.44
	Damascus Museum[41]	87
	BM No. 28G	74.13

[37] Sauvaire, *Matériaux*, II, pp. 307 ff. Cf. A. S. Atiya, *s.v. raṭl*, in the *Encyclopaedia of Islām*; Decourdemanche, pp. 24–28. There is no agreement between Sauvaire and Decourdemanche with respect to the values of the various weights in terms of grams.

[38] There is only one intact *raṭl* weight (a quarter *raṭl*) in the *BM* Catalogue. In the Fouquet Collection there are six pieces (great *raṭl*, ½ great *raṭl*, ¼ *raṭls*) whose weights are given, but none of these is intact. Most of the pieces described by Petrie are broken or are given hypothetical weights.

[39] Ettinghausen, p. 76. Of Syrian origin.

[40] Ettinghausen, p. 76. Of Syrian origin. Presumed to be ½ *raṭl* weight.

[41] Ettinghausen, p. 76. Of Syrian origin. Presumed to be ¼ *raṭl* weight.

In the University College Collection there are a number of apparently nearly intact uninscribed heavy weights,[42] and in the present collection a number of illegible but nearly complete weights, presumably relating to the *raṭl*. These are:

SPECIMEN	WEIGHT
ANS No. 155	346.0
Petrie No. 260	247.3
ANS No. 156	177.5
ANS No. 157	165.0
ANS No. 158	157.5
Petrie No. 262	95.0
ANS No. 159	94.5
ANS No. 160	86.5
ANS No. 161	83.5
ANS No. 162	83.5
ANS No. 163	81.5
ANS No. 164	79.0
Petrie No. 261	77.3
Petrie No. 263	58.1
Petrie No. 265	57.7
Petrie No. 264	54.4
Petrie No. 269	31.7
Petrie No. 266	31.2
Petrie No. 267	14.6

Even allowing for ponderable and variable losses in weight in the inscribed, uninscribed and illegible pieces listed above, it is evident that more than one standard of *raṭl* is represented. On the whole there is little satisfaction in the figures. The three weights described by Jungfleisch conform impressively, but there are no satisfactorily approximate halves or quarters of this 437± unit. There is, however, a glimmer of hope in the approximate conformity of some of the pieces to the standard of the Walters Art Gallery *raṭl* of 337.55 grams. Thus, taking that piece at its present weight and setting some of the other pieces against it and its fractions, we have:

[42] I have converted these weights from grains into grams (as elsewhere dealing with the British publications), to the nearest tenth.

SPECIMEN	RAṬL	½ RAṬL	¼ RAṬL
	337.55	*168.8*	*84.4*
ANS No. 155	346.0	—	—
ANS No. 156	—	177.5	—
Damascus	—	175.5	—
ANS No. 157	—	165.0	—
ANS No. 158	—	157.5	—
Damascus	—	—	87
ANS No. 160	—	—	86.5
ANS No. 161	—	—	83.5
ANS No. 162	—	—	83.5
ANS No. 163	—	—	81.5
ANS No. 164	—	—	79.0
Petrie No. 261	—	—	77.3
BM No. 28G	—	—	74.1

Have we here perhaps the Arab-Syrian (*Rūmi*) copy of the Egypto-Roman pound, to which Decourdemanche[43] has given the value of 340 grams? The half would be 170, the quarter 85 grams. But how to explain the presumed halves and quarters that are overweight? It can only be hoped that the finding of more well-preserved specimens will bring some order out of this chaos.

A few more observations about the *raṭl* may be appropriate. It will be noted that the term was used not only as a weight but apparently also as a unit of measure, for the word appears quite frequently on vessel stamps. The literary sources record that there existed at various times special pounds for weighing meat,[44] and this fact is confirmed by the glass weights, *e.g.*, Nos. 17, 32, 34, 41. Finally the curious weight (No. 25) which appears to represent a *raṭl* and a fraction seems to be related to some equivalent of the *qisṭ*.[45]

[43] Decourdemanche, p. 26.

[44] Cf. Sauvaire, *Matériaux*, II, pp. 309, 312, 315, 316: *raṭl* of *Fārs* for meat, bread, etc. (Muqaddasi); *raṭl* for everything except meat, and *raṭl* for meat (Bakri); *raṭl* for meat in Andalus (Ibn-Ḥawqal); *raṭl* for meat, figs, etc. at Qayrawān (Bakri), etc.

[45] See the remarks on page 19.

9. Wuqīyah ('Uqīyah).

The *wuqīyah* is the ounce (*οὐγχία*, *uncia*). There is as much confusion about the weight of this unit as there is about the *raṭl*: Sauvaire lists ounces from 23 to over 1,000 grams.[46] However, it is certain that there were generally 12 *wuqīyahs* to the *raṭl*, and there was an early legal ounce calculated to be equivalent to 27.288 grams.[47] But there is no correlation between this theoretical figure and the few well-preserved *wuqīyah* glass weights,[48] which, again for the possible convenience of the historical metrologists, I list below without further comment:

	SPECIMEN	WEIGHT
Wuqīyah	Petrie No. 255	31.69
	Petrie No. 256	31.32
	Petrie No. 254	31.24
½ *wuqīyah*	*BM* No. 27G	34.02
	BM No. 35	15.81
	Sauvaire[49]	15.26
	Fouquet, p. 386, No. 12	15.00
	Jungfleisch[50]	14.68
	Jungfleisch[51]	14.40

46 Sauvaire, *Matériaux*, II, pp. 301–304.

47 E. v. Zambaur, *s.v. ḳīrāṭ and ḳisṭ* in the *Encyclopaedia of Islām*. Cf. my monograph devoted to an early bronze *wuqīyah*, where most of the literature with regard to this unit is cited: George C. Miles, "A Byzantine Weight Validated by al-Walīd" (American Numismatic Society, *Numismatic Notes and Monographs*, No. 87, N. Y., 1939).

48 Unfortunately most of the *wuqīyah* glass weights are fragmentary: *e.g.*, *Fouquet Collection*, pp. 385–386; Petrie, p. 21; G. Marçais et E. Lévi-Provençal, "Note sur un pois de verre du viii^e siècle" (*Annales de l'Institut d'Études Orientales*, Faculté des Lettres de l'Université d'Alger, III, 1937, pp. 6–18), a fragmentary 20-*wuqīyah* piece weighing 1,387 grams.

49 Sauvaire, *Matériaux*, II, p. 397.

50 Marcel Jungfleisch, "Poids Fatimites en verre polychrome," in *Bulletin de l'Institut d'Égypte*, X, Session 1927–1928, Cairo, 1929, p. 20.

51 *Ibid.*, p. 20.

	SPECIMEN	WEIGHT	
	ANS No. 175	13.82	(slightly deteriorated)
	Fouquet, p. 385, No. 1	12.20	
	ANS No. 112[52]	12.13	
⅙ *wuqīyah*	*BM* No. 18	6.22	

10. Vessel Stamps.

The term "vessel stamp" has been chosen in preference to the more common "bottle stamp" for the obvious reason that the latter term is a misnomer.[53] There is no evidence that these stamps were ever attached to bottles, that is to vessels with a narrowly contracted neck. There is, on the other hand, abundant evidence that the stamps were applied to the rims of wide-mouthed vessels such as cups and bowls, for many of the stamps are still attached to rim-fragments of the vessel, the intended content of which was stated on the stamp. I have not myself seen a complete, or nearly complete, vessel of the type in question,[54] but rim-fragments in the present collection show clearly that there was very little contraction of the upper sides of the bowl or cup. An excellent example, showing the position of the stamp on the vessel, is No. 37. The reconstructed diameter of the inside of the rim of this cup is 62 mm., and there appears to be almost no contraction of the walls, so that the maximum diameter of the vessel was probably not more than about 70 mm.

[52] ½ *wuqīyah* (?).

[53] Cf. Petrie, p. 1. Analogy with the familiar stamps on the shoulder of liqueur and brandy bottles was probably responsible for the use of the term "bottle stamp." I imagine the modern bottle stamp is a lineal descendant of the Arab vessel stamp, which was in turn of Greco-Roman (Egyptian) origin.

[54] Lamm (plate 19, No. 1, text I, p. 69) illustrates a glass cup with a handle bearing a stamp "with a Kufic inscription," from the Sarre collection in the Kaiser Friedrich Museum (KFM I, 4043). The vessel is complete. The stamp is near the bottom of the tapering walls of the vessel, not at the rim; but as the stamp is not legible in the illustration and is not described, I cannot tell whether it is of the same type as that under discussion here.

These stamps were applied to cups and bowls to indicate and authenticate their content. Thus the vessels were official measures of volume (or sometimes of weight), certified to be up to legal standard by the Governor or Finance Director through his Prefect, who had under his administration, among other things, the "Bureau of Standards" (*Dār al-'Ayār*), a branch of the Treasury (*Dīwān al-Kharāj*).[55] A wide variety of legends appears on the vessel stamps. For example, we have in the present collection: *qisṭ*, and ½, ⅓, ¼ and ⅛ *qisṭ*; ½ and ¼ *qisṭ* of olive oil; ¼ *qisṭ* of ointment; ½ *raṭl* of oil (or grease); and measures (*mikyalah*) of lupins, polished lupins, shelled, black and red lentils, shelled pease, and white and red sesame seeds.

A few words about *qisṭ* and *mikyalah*. The former is the Greek ξέστης, Latin *sextarius*, a measure of liquid capacity, roughly equivalent to a pint. The *qisṭ* varied in weight according to the liquid: thus a *qisṭ* of oil weighed 18 *wuqīyahs*, of wine 20 *wuqīyahs*, of honey 27 *wuqīyahs*.[56] As for *mikyalah*, the word in Arabic simply means "measure," usually for grain. In modern times at least, throughout the Islamic world (in Persian and Turkish, for example), it also means a "measuring-cup" or a vessel for measuring. I find no specification of the amount, and one might therefore assume that a "measure" of the given substance legally contained so much by weight or volume, and if the vessel bore the required official stamp it was accepted in the market or the Treasury as capable of containing the legal amount, whatever it may have been.

Regarding the use of the vessels bearing official stamps there are two interesting, and perhaps relevant, passages in Islamic literature.[57] One is the description of the *Dār al-*

[55] Cf. Grohmann, *Arabische Eichungsstempel*, p. 147.

[56] Sauvaire, *Matériaux*, III, pp. 439–444; 289–291; *BM*, p. xxii; *Fouquet Collection*, pp. 341–342; E. v. Zambaur, *s.v. ḳisṭ* in the *Encyclopaedia of Islām*.

[57] Both cited by Casanova in *Fouquet Collection*, pp. 341–342.

'Ayār, or Bureau of Standards, in Miṣr (Cairo), in Maqrīzi's famous *Khiṭaṭ*,[58] of which I offer a fairly literal translation:

"There was for the control [of weights and measures] a place known as the *Dār al-'Ayār* in which all the scales and weights were tested. The Imperial *dīwān* supplied everything that was necessary for this bureau, such as copper, iron, wood, glass, and other equipment, and also hired craftsmen, supervisors and the like. The inspector of weights and measures (*muḥtasib*), or his deputy, went to this bureau so that everything that was made there could be tested in his presence. If they were correct, he certified them; and if not, he ordered them to be remade until they were correct. There were in this bureau patterns for testing the accuracy of the standards; and weights, scales and measures of capacity were not sold anywhere except in this bureau. All the merchants when summoned by the inspector of weights and measures came to the bureau with their scales and weights and measures for immediate testing. If any were found deficient they were taken up by the bureau from the owners and destroyed; and the owner was required to buy others that were accurate and to pay for them. . . . This bureau was in operation throughout the rule of the Fāṭimids, and when Ṣalāh al-Dīn came to power he continued the bureau and made of it a pious foundation (*waqf*). . . . And this bureau still exists."[59]

Maqrīzi wrote in the early fifteenth century, but his sources are earlier, and in this passage he is describing a practice which "still exists" and which doubtless antedated the Fāṭimids and very probably originated in Umayyad or Byzantine times.

The other passage, also relating to a period later than that of the stamps with which we are dealing, is not without interest and has possible significance. The talented Persian

[58] *Al-Mawā'iẓ w-al-I'tibār fi Dhikr al-Khiṭaṭ w-al-Āthār*, Būlāq edition, 1270, I, p. 464; cf. Sauvaire, *Matériaux*, Aug.–Sept., 1884, p. 248.

[59] For further reference to this passage see note on p. 68.

scholar and traveler Nāṣir-i Khusraw, who visited Egypt in the middle of the eleventh century, in describing the life and customs of the inhabitants of Cairo mentions a local practice which apparently was uncommon enough in those days to occasion special comment:

"In the bazaars, the grocers, druggists and peddlers themselves furnish the containers for the merchandise they sell, whether they be of glass or pottery or paper. It is therefore not necessary for the purchaser to bother about the receptacle."[60]

I think it might be reasonably argued that the eleventh-century practice had its earlier counterpart in the glass vessels of which we are speaking. However, this need not imply that every container bore a stamp certifying the amount of its content. In fact, it seems to me unlikely that every grocer in the eighth- and ninth-century bazaars of Cairo was required to sell his merchandise in government containers. The number of such receptacles would have had to be enormous. On the contrary, I would like to suggest that the use of many, if not all, of the vessels with official stamps may have been restricted to official, specifically Treasury, transactions. The liquids named on the stamps, such as oil, especially olive oil, together with the use of the word *qisṭ*, are suggestive of the early system of payment of certain taxes in kind. In the first days of the Arab Empire not only the *jizyah*, or capitation tax imposed on non-Muslims, but also the *kharāj*, or land-tax, to which Muslims as well as non-Muslims were sometimes liable, were collectable partially in kind.[61] Thus we read in Balādhuri's history

[60] Charles Schefer, *Sefer Nameh: Relation du Voyage de Nassiri Khosrau*, Paris, 1881, p. 53 of the text:
در بازار آنجا از بقال وعطار وپیله‌ور هرچه فروشند باردان آن از خود بدهند اگر زجاج باشد واگر سفال واگر کاغذ فی الجمله احتیاج نباشدکه خریدار باردان بردارد.

[61] Cf. C. H. Becker, *s.v. djizya*, and Th. W. Juynboll, *s.v. kharādj*, in the

of the early conquests that 'Amr b. al-'Āṣ imposed on every adult in Egypt, excepting the poor, "two *dīnārs* as *jizyah*, and on every landowner, in addition to the two *dīnārs*, three *irdabbs* of wheat, two *qisṭs* of oil, two *qisṭs* of honey and two *qisṭs* of vinegar, to be given as a subsistence allowance to the Muslims and gathered into the public store-house (*dār al-rizq*)."[62]

The implication of my argument is clear: that the vessels bearing official stamps, such as "one-quarter *qisṭ* of olive oil," or simply a *qisṭ* or its fractions without qualification, were used by tax-collectors and perhaps their deputies in the bazaars for the measuring-out of tax payments in the form of oil, honey, vinegar, etc. It is to be admitted, however, that the various types of leguminous seeds which are specified so frequently on the stamps do not appear to have any likely association with taxes.[63]

11. Private Weights and Stamps.

I am not certain that Nos. 206–210 belong in this catalogue. They have been admitted only on epigraphic grounds, for in other respects they appear not to belong to any of the more clearly defined early categories. In general this type has been attributed in previous publications to post-Fāṭimid

Encyclopaedia of Islām; Philip K. Hitti, *History of the Arabs*, London, 1937, pp. 170–171.

[62] Al-Balādhuri, Kitāb Futūḥ al-Buldān, ed. de Goeje, Leiden, 1866, pp. 241–215:

فوضع على كلّ حالم دينارين جزيةالّا ان يكون فقيراً والزم كلّ ذى ارض
مع الدينارين ثلثة ارادب حنطة وقسطى زيت وقسطى عسل وقسطى خلّ رزقاً
للمسلمين تجمع فى دار الرزق

Cf. transl., *The Origins of the Islamic State* ("Studies in History, Economics and Public Law," Columbia University, Vol. LXVIII), N. Y., 1916, p. 338. Sauvaire (*Matériaux*, III, pp. 440 ff.) cites other passages of like tenor.

[63] However, the papyri furnish us with instances of notarized debt contracts in terms of corn: cf. Grohmann, *Egyptian Library*, II, pp. 123–144.

times, but the ones which are described here differ markedly in style from those which are clearly of the Mamlūk period. They were perhaps the private weights and stamps of wealthy shop-owners. The absence of executive phrases would appear to indicate their unofficial character.

12. Amulets or Tokens.

Here again, as with the private weights and stamps, I have been in some doubt about the admissibility of these pieces (Nos. 211–220) to the present catalogue. It will be observed that they have the shape and appearance of coin weights but that they conform to no weight standard and that their inscriptions, consisting solely of pious expressions, are historically meaningless. They are, in these latter respects, similar to pieces of Fāṭimid or later date, but the epigraphy is of an early character, and for this reason I have included them. I am not prepared to say whether they were shop or trade tokens of some sort, or whether they were amulets.[64]

13. Unidentified Officials.

It may be expected that with the publication or finding of duplicates, and especially of better-preserved duplicates, of these pieces with unidentified names, we may be able to place some of these officials in their proper chronological position. It must also be observed that my search for the names in the historical literature has by no means been exhaustive.

14. Anonymous Coin Weights.

It seems to me likely that the anonymous coin weights are on epigraphical grounds to be assigned to the Umayyad

[64] Cf. *BM*, Nos. 391–396. Lane-Poole implies that they are of the class of private weights. Casanova (*Fouquet Collection*, pp. 353–354) calls them amulets. Petrie places them in the catalogue after the later private weights but does not commit himself with respect to their purpose. Nor does Grohmann, *Arabische Eichungsstempel*, p. 151.

period; and it would be logical to suppose that they predate the earliest weights bearing officials' names. However, since the evidence from facts now available cannot be conclusive, I have placed them in a separate category, not implying any specific position in the chronological sequence.

15. Anonymous Vessel Stamps.

The "anonymous" vessel stamps were not necessarily truly anonymous; for the designation of content often appears on one stamp and the name of the functionary on another. The finding of some fragments of vessels with both name and content stamps preserved would serve to date such pieces as Nos. 176–190.

16. Vocabulary.[65]

For the benefit of readers unfamiliar with Arabic I present in the subjoined lists a glossary of the words and phrases which occur on the weights and measures in the catalogue. The spelling of each word, in some instances faulty, is as it appears on the glass.

A. *Titles and Epithets.*

الامير al-amīr = The *amīr*, lord, prince, chief, commander
Used by Caliphs and Governors.

امير المؤمنين amīr al-mu'minīn = Commander of the Believers
Title of the Caliph.

عبد الله 'abdullāh = Servant of Allāh
Used by Caliphs.

مولى mawla = Freedman, client, servant
Used by Governors and other functionaries in conjunction with the name of the Caliph to whom they owe their liberty.

[65] I am grateful to my friend Dr. Edward J. Jurji for his kindness in checking through this vocabulary. He cannot, however, be held responsible for the readings, for he has not seen the weights and stamps themselves; nor for the inconsistencies in the transliteration, which, to avoid pedantry, I have found inevitable.

B. *Executive Phrases.*

امر 'amara = Ordered, commanded

Used by the principal official, and also to introduce admonitions of the deity.

امر . . . ب 'amara . . . bi. . . . = Ordered, commanded (transitive)

بصنعه bi-ṣan'ihi = The making of it

بطبعه bi-ṭab'ihi = The stamping of it[66]

ممّا امر به mimmā 'amara bi-hi = Of, or among, those things ordered by = an order of

Used by the Caliph, Governor, or Finance Director. This phrase is common on the coins.[67]

على يدي 'ala yaday = At the hands of = executed by

Used by the Prefect or mayor. This phrase sometimes occurs on the coins.[68]

C. *Benedictory Phrases.*

ابقاه الله 'abqāhu'llāhu = May Allāh preserve him

اصلحه الله 'aṣlaḥahu'llāhu = May Allāh mend him, keep him straight

[66] There have been a number of arguments and counterarguments, not worth summarizing here, with respect to the proper reading of this formula. Casanova, and Petrie following him, have rendered it بصنعه "the making of it." Ṣ and ṭ are practically identical in the Kufic of the glass stamps, and I doubt that any argument for one or other of the two words can ever be conclusive. "Stamping" seems to me to be the logical expression, and I have preferred to use it in this catalogue. However, in one or two cases, the critical letter appears indubitably to be ṣ, and there I have transliterated it so, and have altered the translation accordingly.

[67] See, for example, the British Museum, Paris and Berlin catalogues of Umayyad and 'Abbāsid coins.

[68] Cf. W. Tiesenhausen, *Moneti vostochnavo Khalifata*, index, p. 362; George C. Miles, *The Numismatic History of Rayy* (American Numismatic Society, *Numismatic Studies*, No. 2), N. Y., 1938, Nos. 37D, E, 42, 64A, etc. The earliest numismatic occurrence of the phrase appears to be about the year 130 A.H. (under Yazīd b. 'Umar at Rayy in Persia, and under 'Abd al-Malik b. Marwān at Fusṭāṭ in Egypt).

اعزّه الله 'a'zzahu'llāhu=May Allāh strengthen him

اكرمه الله 'akramahu'llāhu=May Allāh be generous to him

امتع الله له 'amta'a'llāhu lahu=May Allāh give him long enjoyment (of his life)

Most of these phrases are also common on the coins.

D. *Pious Expressions.*

امر الله بالوفاء 'amara'llāhu bi'l-wafā'=Allāh commanded the fulfillment of promises (payment of debts), *i.e.*, honesty

This exhortation sometimes occurs on the coins.[69]

امر محمد بالوفاء لله 'amara Muḥammadun bi'l-wafā' li'llāhi= Muḥammad ordered honesty to Allāh

بخ bakh=Bravo, good!

بسم الله bi'smi'llāh=In the name of Allāh

ربّى الله rabbīu'llāh=My Lord is Allāh

الوفاء لله al-wafā'u li'llāhi=The fulfillment of promises (payment of debts), *i.e.*, honesty, to Allāh=honesty is an attribute of Allāh

يعبد الله الامير ya'budu'llāha'l-amīr=The Amīr worships Allāh

The two Qur'ānic quotations (Chap. XXVI, verses 181 and 183) which occur on the stamps are translated in the catalogue.

E. *Weights, Measures, Denominations and Fractions.*

ثلث thulth=one-third

خرّوبة kharrubāh=*kharrūbah*, carob seed, *siliqua*

خرّوبات kharrūbāt=*kharrubāhs*

درهم dirham=*dirham* (the coin)

دينار , دينر dīnar, dīnār=*dīnār* (the coin)

ربع rub'=one-quarter

[69] Cf. Tiesenhausen, *op. cit.*, index, p. 356; Miles, *op. cit.*, Nos. 26–28, 30. The complete phrase as it occurs on the coins is: امر الله بالوفاء والعدل = "Allāh commanded honesty and justice."

رطل raṭl=*raṭl*, pound[70]
رطلين raṭlayn=two pounds
رطل كبير raṭlun kabīr=great pound
سطر saṭr=row, series
سنة sanah=year
فلس fals=*fals* (the coin, or money)
القسط , قسط qisṭ=*qisṭ*, *ξέστης*, *sextarius*
قيراط , قيرط qīraṭ, qīrāṭ=*qīrāṭ*, *κεράτιον*, carat
قراريط qararīṭ=*qīrāṭs*
كيل kayl=weight, measure
مثقال , مثقل mithqal, mithqāl=*mithqāl*, weight
مكيلة mikyalah=measure
نصف niṣf=one-half
وافية , وفية , واف wāf, wafīyah, wāfīyah=true or full weight, full measure
وزن wazn=weight
وقية wuqīyah=*wuqīyah* (or *'ūqīyah*), ounce, *οὐγχία*, *uncia*
وقية كبير wuqīyatun kabīr=great ounce

F. *Numerals.*

تسعة tis'ah=nine
احدى عشرة 'iḥda-'ashrah=eleven
اثنى عشرة 'ithna-'ashrah=twelve
اربع عشر 'arba'-'ashr=fourteen
خمسة عشر khamsat-'ashr=fifteen
سبعة عشر sab'at-'ashr=seventeen
ثمنية عشر thamanīyat-'ashr=eighteen
تسعة عشرة tis'at-'ashrah=nineteen
عشرين 'ishrīn=twenty
اثنين وعشرين 'ithnayn wa-'ishrīn=twenty-two
ثلثة وعشرين , ثلث وعشرين thalath wa-'ishrīn, thalathat wa-'ishrīn =twenty-three

[70] Lane (*Arabic-English Lexicon*) says (Book I, p. 1102) that the pronunciation *riṭl* is "better known" or "the more chaste," but that *raṭl* is "now in common use," as it is today.

اربعة وعشرين 'arba'at wa-'ishrīn = twenty-four

خمس وعشرين , خمسة وعشرين khams wa-'ishrīn, khamsat wa-'ishrīn = twenty-five

سبعة وعشرين sab'at wa-'ishrīn = twenty-seven

ثلثين thalathīn = thirty

اثنين وثلثين 'ithnayn wa-thalathīn = thirty-two

مئة , مائة mi'ah = one hundred

مائتين mi'atayn = two hundred

G. *Substances and Qualifications.*

ايض 'abyaḍ = white

احمر 'aḥmar = red

الاسود al-aswad = black

الانز al-anz = lentils

ترمس , الترمس turmus, at-turmus = lupins

تملّس tamallas = polished[71]

جلبان julubān = pease

جلجلان juljulān = sesame seed

حبّ الكسبر ḥabbu'l-kusbur = coriander seed

دهن duhn = oil, lard, grease

زيت , الزيت zayt, az-zayt = olive oil

الطلاء aṭ-ṭilā' = ointment, oil, tar[72]

عدس 'adas = lentils

لحم , اللحم laḥm, al-laḥm = meat

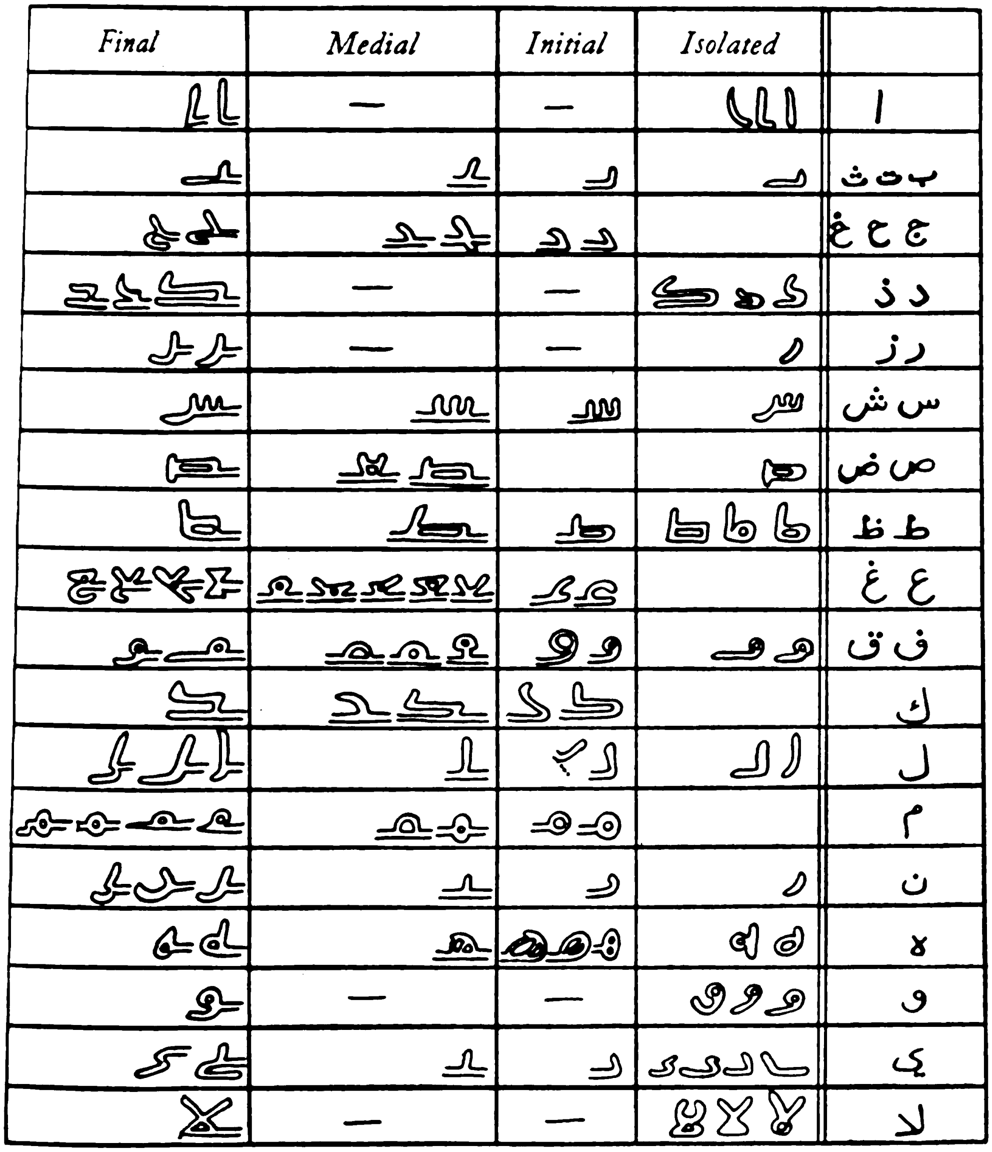
مقشّر muqashshar = shelled

17. Epigraphy.

The accompanying table shows the common forms of the letters of the Kufic alphabet as they appear on the glass weights and stamps of the Umayyad and early 'Abbāsid periods, together with their equivalents in the conventional Arabic character.

[71] See the note under No. 22, *infra*.

[72] There is also a rare meaning, "wine," which would fit well, but one would expect the common word, *khamr*.



EPIGRAPHY OF EARLY ARABIC GLASS WEIGHTS AND STAMPS

18. Provenance.

Until only very recently all Arabic glass weights and stamps were assumed to be of Egyptian manufacture.[73] The reasons for this assumption were excellent and incontrovertible: most of the known specimens were found or bought in Egypt, and

[73] Cf. *BM*, pp. xvii–xviii; Petrie, p. 1.

the evidence provided by the names of the early officials whose government service is known from Arabic literary sources to have been in Egypt, and of the Fāṭimid Caliphs whose capital was Cairo, was overwhelming. But in 1939 Ettinghausen's report on the weight in the Walters Art Gallery established the fact that glass weights were also manufactured in Syria. The *raṭl* in question bears the name of al-Walīd b. 'Abd al-Raḥmān, who is known to have been Finance Director in Damascus in 126 A.H., when 'Īsā b. abī-'Aṭā was occupying the corresponding position in Egypt.[74] Since Ettinghausen's discovery the publications of some weights in the National Museum in Damascus has provided further substantiation of the existence of glass weights in Syria in Umayyad times.[75] One piece in particular presents the same kind of evidence as that of the Walters Art Gallery *raṭl*: a *dirham* (?) of the year 109 A.H., bearing the name of the Caliph Hishām. At this time 'Ubaydullāh b. al-Ḥabḥāb was Finance Director in Egypt, and we have in the glass weights and vessel stamps plentiful documentation of his activity there.

The fact remains, however, that the great majority of published glass weights and stamps are of Egyptian origin; and in the present collection there is no evidence that any of the pieces came from anywhere but Egypt.

[74] Ettinghausen, pp. 74–75.

[75] Djafar Abdel-Kader, "Monnaies musulmanes et Poids en verre inédits," in *Mélanges Syriens offerts à Monsieur René Dussaud*, I, Paris, 1939, pp. 399–400.

THE MANUFACTURE OF EIGHTH-CENTURY EGYPTIAN GLASS WEIGHTS AND STAMPS

By FREDERICK R. MATSON

Introduction

THE physical traces of past civilizations must be examined exhaustively if archaeologists are to extract the fullest possible information from them. In the cultural debris, ceramic objects are dominant—bricks, sun-dried and fired; potsherds, plain, painted and glazed; glass in its many forms. Most settlements were near water, so the surface clays usually found in such localities had and have a great influence on man's activities. Much has been learned from the study of the shape and decoration of pottery, from the cuneiform writings on clay tablets, and from inscribed glass objects. More can be learned when it is possible for a technically trained ceramist with some understanding of archaeology to analyze representative materials and correlate these data with the geological conditions of the region from which they came. Some technological work has been done with pottery, but little has yet been attempted with glass. Analyses of ancient glasses have been published, but aside from the exceptionally fine work of Neumann[76] and some of the data reported by Lucas[77] there has seldom been an interpretation of the analytical results or an attempt to integrate them into the broader cultural picture. Because of the fragility of glass and the degree to which it may weather, relatively little of it is found in excavations and that which is recovered is carefully preserved,

[76] Bernhard Neumann, "Antike Gläser, ihre Zusammensetzung und Färbung," in *Zeitschrift für angewandte Chemie*, *38* (1925), pp. 776, 857.

[77] A. Lucas, *Ancient Egyptian Materials and Industries*, London, 1934 (2nd Ed.).

usually inaccessible for analytical purposes. Many of the glass analyses that have been published are of uncertain origin and date.

When Dr. Miles asked me to analyze a glass coin weight on which the legend was too blurred to be of any value, and pointed out that the inscriptions on the group of glasses he has been studying make it possible to date the objects accurately with the probability that they were made at one shop in Egypt, I readily agreed to undertake a technological study of the glass. In doing so, however, I requested that he lend me a representative series of eighth-century stamps and weights, which he most kindly did. Thus it was possible to study and test sixteen pieces made within a limited period of time and space and then to decide whether the group was sufficiently homogeneous to justify the work of a complete chemical analysis.

Most of the work covered in this report was done in my study, but the chemical analyses and synthesized glass melts were carried out in the Glass Section of the Research Laboratories of the Armstrong Cork Company at Lancaster, Pennsylvania.

In consideration of the fact that many readers who may glance at this chapter will not be interested in the detailed discussion of technical data, the following outline has been prepared to indicate the scope of the work.

Appearance of the Glass: Color, Weathering, Seeds, Stones.

Fabrication: Techniques of Manufacture, Melting Temperature.

Physical Measurements: Index of Refraction, Specific Gravity, Annealing.

Chemical Analyses: Composition, Glass Batch Materials, Glass Formulas, Comparative Analyses.

Cultural Considerations.

Summary

Sixteen eighth-century Egyptian glass stamps and weights,

thirteen blue-green,[78] one amber and two deep blue, were subjected to a detailed scrutiny and chemical and physical tests. The tests showed that ten of the blue-green pieces were uniform in composition, so a glass fragment from one of them was analyzed. It was a glass of unusual composition in that its lime content was very low. No analyses of similar ancient glasses could be found. The pale green glass originally submitted by Dr. Miles for analysis (No. 196) was quite different from the rest of the group both in physical properties and in degree of weathering and chemical composition. The latter is like many other Egyptian glasses that have been published. One blue-green glass is distinct in its specific gravity and has red clay encrusted on its surface that helps mark it as of different origin from the rest. Only two of the blue-green glasses showed pronounced weathering.[79]

The amber glass is very similar to the major blue-green group in its properties and probably in its chemical composition. Its color could be obtained by the addition of sulphur, carbon or both to the glass batch.

The two blue glasses contain a faint trace of cobalt but are colored principally by copper, manganese and iron. Their physical properties are similar to those of the second glass analyzed.

[78] Usually described as "pale green" in the catalogue.

[79] [The following were the pieces studied by Dr. Matson: coin weights Nos. 1, 12, 71, 95, 107, 132, 139; disk-weight No. 53; ring-weights Nos. 34, 94, 164; vessel stamps Nos. 3, 75, 104, 176 and 196. The two pieces subjected to chemical analysis were Nos. 34 and 196. The selection (by myself) of No. 196 as expendable for analysis was in some ways an unfortunate one, as it was atypical, but the choice was dictated by practical rather than scientific considerations. This vessel stamp was not typical in size, nor, to judge from the faint traces of inscription which remained, in epigraphy. I believe that it is quite possible that this piece is of later origin, perhaps later 'Abbāsid or even Fāṭimid—a suspicion which may be supported by some of Dr. Matson's detailed observations. See especially, with reference to No. 196, pp. 35, 37, 43, 45, 49, 51, 53, 62 and 65, below. GCM]

The techniques of manufacture of the weights and stamps were postulated after the objects had been carefully studied. The glass used is of poor quality in that it was not fired at a high enough temperature to melt all the batch grains and eliminate the larger seeds. This is especially evident in the heavy ring-weights.

The Arabic glasses studied were made for a utilitarian function, so their poor quality should not be overstressed. The compositions may be typical of eighth-century glass, but the firing and handling of the glass was doubtless much better done by the skilled artisans who catered to the luxury trade.

Appearance of the Glass

Color

Blue-green is the dominant color, varying from a pale green-gray in thin half-dinar coin weights to a very deep green in the thick gobs of glass that formed the ring-weights. Much of the color range is due to the thickness of the weights and stamps, for the greater the depth of glass through which light must pass, the more light is absorbed and the darker in color the glass appears. There is also some color variation among pieces of about the same size. These differences did not correlate with the other physical properties of the glasses. Possibly if a large series were sorted with respect to color, some correlations might be found between the date of manufacture and the color.[80]

The blue-green color and its variants are formed by the ac-

[80] [The pale, blue-green (bottle-green) color predominates in the Umayyad and early ʻAbbāsid periods, but the occasional occurrence of other colors, such as blue and amber, among these early pieces invalidates any general conclusions. In the Fāṭimid period (roughly 300–550 A.H.: 912–1155 A.D.) the range of colors is wide, with blue-green again predominating. The late ʻAbbāsid weights of al-Mustaḍi and al-Nāṣir (566–622 A.H.: 1170–1225 A.D.) are, like many of the still later Ayyūbid and Mamlūk pieces, opaque, and occur in many colors, including white, cream, yellow, amber, turquoise, etc. GCM]

tion of copper (CuO) and iron in the glass, much of the latter being in the ferrous (FeO) state, which colors a glass blue. Iron in its highest state of oxidation (Fe_2O_3) gives soda-lime glass a yellow-green color. Both forms of iron are present in the glass analyzed—so a blue-green color results, with emphasis on the blue because of the small amount of copper present. Flakes of iron scale such as those from the molds used to form the inscriptions begin to dissolve rapidly in glass when they come in contact with it and they, being mostly Fe_2O_3, cause olive-yellow to yellow-green streaks in the glass.

The total iron content of the glasses and the relative proportions of the ferrous and ferric forms in different melts is variable, as is shown by the two analyses (Table 3), so the color may also be expected to vary.

Copper is such a powerful coloring agent that the addition of only a small amount turns a clear soda-lime glass blue. Just a trace of copper occurs in the green glasses—enough to give them a bluish tint, but not enough to cause a true blue color. Chemical confirmation of the presence of copper in all the green and blue glasses, except No. 196, was obtained by a sensitive spot test (a-benzoinoxine).

The manganese that is characteristically present in these Egyptian glasses also contributes to the quality of the color, although it alone would impart a purple shade to the glass.

The two deep-blue coin weights have copper as their major coloring ingredient. This was confirmed by a spot test. A trace of cobalt is also present, identification having been made by a spot test, using hydrogen peroxide and potassuim acid carbonate. A faintly positive reaction (green) was obtained. It is interesting that cobalt appears in the glass in minute amounts, for there has long been much discussion, based on chemical analyses, as to whether or not cobalt was used in the production of Egyptian blue glasses. The problem was reviewed and settled with irrefutable spectrographic evidence by Farnsworth and Ritchie for glass of the XVIIIth Dynasty

and for one fragment from the XIXth.[81] They found that the transparent glasses of a "dark rich blue, inclining towards indigo" were colored by copper and cobalt, modified by manganese, while the "bright greenish blue, or peacock blue" was due to copper and manganese alone. The blue coin weights fall in the first group in color, and our chemical tests show that Arabic glass of the eighth century was similar in manner of color formation to that of the XVIIIth Dynasty. Manganese is present in these blue glasses as shown by the sodium bismuthate test.

The amber coin weight could be of the normal composition used in the pale blue-green weights of the same size with the addition of a reducing agent such as coke, and possibly a small amount of sulphur. Amber glasses can so easily be made under reducing conditions from batches that would be colorless to blue-green in color when melted in an oxidizing or neutral atmosphere that there is no reason to suppose that a special composition radically different from the other was used. More will be said about this in connection with the discussion of indices of refractions and specific gravities.

Weathering

With two exceptions the stamps and weights showed little weathering when examined superficially. This indicates that the glasses were reasonably resistant to attack, but the history of the objects must be known before any sure statement as to the quality of the glass can be made. Even the best soda-lime glass will develop a cloudy surface if it is kept in a moist, hot atmosphere, and poor glass may remain unmarred if stored in a dry region. The glass could have been buried in acid or alkaline soil subject to moisture from rain or river floods. It might

[81] Marie Farnsworth and Patrick D. Ritchie, "Spectrographic Studies on Ancient Glass—Egyptian Glass, Mainly of the Eighteenth Dynasty, with Special Reference to its Cobalt Content," *Technical Studies*, Vol. VI, No. 3 (January, 1938), pp. 155–173.

have been protected from dampness, or exposed on the surface of the ground and eroded by wind-blown sand as well as water. After discovery in recent years, it could have been carefully cleaned, with the removal of the opaque surface patina such as is common on Roman glass, but even so, weathering can usually be recognized by microscopic examination of the glass surfaces.

The two noticeably weathered glasses were No. 196, a green-gray vessel stamp, and No. 164, a pale-blue ring-weight. Both were quite illegible. Any trace of inscription has completely disappeared from No. 164 due to the pitting and spalling of its surface. No. 196, though pitted, had not spalled. It was analyzed chemically.[82] Both these glasses had indices of refraction and specific gravities that were higher than those of the major group, which indicates that their chemical compositions differ from those of the majority.

Nos. 1, 3, 12, 34, 71 and 95 (amber) all show a slight degree of surface weathering when examined carefully under a binocular microscope. They have finely pitted surfaces in which clay is trapped. The depressions were not formed by bubbles breaking at the surface as the glass cooled, as is the case with a few of the pieces. The glasses in this weathered series date from the first half of the eighth century, with the exception of No. 71 (759–760 A.D.). The two badly weathered pieces, Nos. 164 and 196,[83] are of uncertain date, but may be from the early to middle eighth century. This may indicate that there was a slight change in glass composition about the middle of the eighth century. A much larger series of dated weights and stamps would have to be examined before this suggestion could be verified.

The outer rim of No. 176 is dulled by abrasion, while the central part of the surface that bears the inscription is glossy. This appears to be a case of exposure and possibly of the rub-

[82 & 83] See footnote 79, p. 33, above.

bing of two objects together, for only the raised outer rim of the vessel stamp is abraded.

Of the two blue glasses, No. 132 shows pronounced weathering with the formation of areas of opaque brown glass as well as surface pitting, while No. 107 shows none at all; yet their uniform physical properties that were measured point to similar chemical compositions for both. Environment, if known, might explain this difference.

Seeds

Small bubbles called seeds are quite numerous in the Arabic glass. As a glass batch begins to decompose and melt down when heat is applied, some of the materials such as limestone and soda ash give off gases which are trapped in the form of seeds in the sticky mass of nascent glass. When the firing temperature is raised, the glass becomes more fluid and many of the seeds can rise to the surface and break. If the temperature is not high enough for the seeds to escape freely and the glass remains quite viscous, the seeds will be trapped, unable to free themselves, and will appear in the cooled glass.

The seeds in the Arabic glass vary from pin points to bubbles 3 mm. in diameter, most being less than 1 mm. The coin weights and vessel stamps contained only very fine seeds, with a few exceptions such as Nos. 75, 104 and 139, but the large pieces of glass used in the ring-weights were very seedy.

Glass melts were made in the laboratory of the same compositions as those of Nos. 34 and 196. They behaved normally, but the final cast glasses were full of very fine seeds because the compositions lacked fining agents such as are used in modern glasses to help sweep out the seeds.

Stones

When a glass batch is melted, some of the sand does not completely disappear, but floats in the surface foam or is trapped at and above the glass surface on the vessel wall.

Some of this will flow with the melt when it is poured and appear as unmelted granules, termed "stones," in the glass. A higher melting temperature and stirring would make this sand go into solution. The Arabic glass is so full of bubbles and imperfections that it is obvious that it was not in a very fluid state when poured. This will be considered later. It is not surprising that "stones" are found in such glass.

They occur in three of the large pieces—Nos. 34, 53 and 94 (two ring-weights and a disk-weight), and in No. 104, a one-quarter *qisṭ* vessel stamp. The latter contains four small grains with rounded edges. The rounding of sharp edges of grains shows that they were beginning to dissolve in the glass. Fine stones that can be seen only under the microscope, where they look like streaks of surface scum, and quartz grains up to 4 mm. in diameter occur in the large weights. They can best be seen in front of a strong light.

Fabrication

Technique of Manufacture

Conclusions based on the study of sixteen specimens have not the certainty that would result from an examination of a much larger group, but these sixteen pieces, selected as representative by Dr. Miles, give many indications as to how the stamps and weights were made. They are sufficient to suggest a broad picture of the processes. In the following discussion my conclusions (printed in italics) are followed by a statement of the supporting evidence.

Coin Weights

A button of glass was poured from a crucible or ladle onto a flat iron plate. Iron scale in the form of flakes up to 2 mm. in diameter occurs on the flat reverse surfaces, thus indicating close contact with iron. The iron was identified chemically by the potassium thiocyanate test. A relatively large deposit of iron oxide on the back of the coin weights (up to 5 mm. wide

and 12 mm. long), some of it folded into the glass, was picked up by the first—the hottest—glass to touch the plate. Hot glass will stick to cold iron, so that the first area of contact as a tongue of glass touches the metal will stick, not unlike a warm hand or tongue on a very cold doorknob in the winter. This iron deposit is quite marked on the back of the coin weights. The seeds, iron scale, and streaks formed by dissolving iron tend to be concentrically distributed. This would result if the glass were poured in pyramidal fashion at a spot on the plate, for the glass would fall in a circular pattern. The large number of iron flecks appearing within the weights, some of them even having been in the glass long enough to start dissolving in the form of yellow-green streaks, suggests that an iron ladle had been used to handle the glass. The ladle, through use, would develop an oxidized crust that would tend to scale off when coming in contact with hot glass.

An iron die was then pressed against the disk of hot glass to produce the inscription. A careful examination of the inscribed surfaces under a microscope shows iron scale on the surface at the base of letters, in open areas on the disks, and down in the glass just below the inscription, where it has begun to dissolve.

The die was carefully centered over the gob of glass before pressing. The raised ring of glass around the edge of the weights is uniform in size. However, the disks are sufficiently irregular in shape to show that they were not cast in depressions in an iron plate. Surface tension will cause gobs of hot glass to tend to assume a round shape on a clean, flat surface.

The remarkable uniformity in weight of the several types of coin weights has been discussed in detail by Dr. Miles.[84] The precision attained in manufacturing these glass weights is an indication of the skill of the eighth-century glassmakers. In any repetitive process, such as ladling out a small amount of glass into which an inscribed iron stamp is pressed, it is pos-

[84] See pp. 5–12, above.

sible to obtain sufficient dexterity so that almost identical amounts of glass will be used for successive stampings. One is always impressed when watching skilled glassworkers, such as those in the Steuben shops at Corning, N. Y., or the Venetians who were at the Chicago and New York World's Fairs, by the skill with which they gather exactly the right amount of glass to form a handle or an ornament. In modern optical glass manufacture, the operator at the "glory hole" must shear off exactly enough soft glass from a cylinder that he has been shaping in a flame to fill precisely a mold into which the glass is pressed. There is no reason why earlier glassmakers could not have attained the same skill, particularly if they used a small ladle with which to dip out exactly the right amount of glass.

Glass weights are relatively cheap to make and can be prepared in large quantities, so it would be quite feasible to weigh the weights after manufacture and to reject those that differed from the standard. Such discarded pieces could easily be remelted as cullet and could then be reshaped.

Skill in manufacture and the low cost of rejection of substandard weights would seem to account for the accuracy in weight that has been found.

Vessel Stamps

A gob of molten glass was ladled or poured on the red-hot and still plastic wall of a glass vessel at or just below the rim. The inscribed stamp was then pressed on the hot glass while the interior of the wall at the spot where the impression was being made was supported to prevent deformation. There are only four vessel stamps in the collection studied, so these statements may have limited application. The stamps were not formed separately and then attached to the vessels, *i.e.*, made by the coin weight technique, because none of the stamps had the prominent iron deposit on their reverse that is characteristic of all the coin weights in the group. At the stamp-vessel interface there are

several large bubbles which suggest air entrapment when the two pieces were joined. There is an oval lozenge-shaped projection on the interior of the vessel wall behind the stamp which indicates that the support during the time of pressing had a sunken area into which the glass flowed under pressure. This technique would more or less rivet the stamp to the wall and the union would be much stronger than if two flat glass surfaces were pressed together when still soft. None of the four lozenge surfaces shows any trace of iron scale, so there is no evidence as to the form of support used to back up the wall. It is possible that a tong-like mold was used.[85]

Disk-Weight

The disk-weight examined (*No.* 53) *appears to have been made by the same technique as that used for the coin weights.* It is fragmentary, but originally was about 8 cm. in diameter with an inscribed central depression 4 cm. in diameter. The outer ring of glass is 2 cm. thick. On the base of the disk the glass shows many folds indicative of the way in which it was poured to form this large disk. There is an iron-scale deposit about 3 cm. in diameter near the center of the base. A large amount of glass was needed to form this stamp and most of it is of poor quality, full of seeds, stones and streaks (striae). Judging from its appearance, the glass was probably quite viscous when poured.

Ring-Weights

The three specimens examined are too fragmentary to permit detailed reconstruction of the techniques used in forming them. Glass could be poured in the form of a strip, bent into shape around an angular core, and then impressed with the stamp. As

[85] [All the vessel stamps have this lozenge-shaped bulge on the inner wall. Mr. Robert J. Leavy of the Steuben Glass Company, who was kind enough to examine a few weights and stamps which I brought to him, believed the bulge to be the result of the natural sinking of the vessel wall at the hottest point, *i.e.*, at the center of the application of the stamp. GCM]

with the disk stamp, large quantities of glass were used, so quality suffered. There is every indication that the glass was not heated at a temperature sufficient to make it fluid enough to eliminate the bubbles and other unhomogeneities and dissolve all the stones.[86]

Melting Temperature

It requires much more heat to melt a glass batch, bringing all the materials into solution and eliminating at least the larger bubbles, than it does to soften it once it has been formed. Therefore, softening temperatures cannot indicate differences between glasses but can only give a minimum temperature above which the glasses were melted.

Glass batches were calculated and weighed out on the basis of the chemical analyses of Nos. 34 and 196, and were fired in clay crucibles in an electric furnace to 2000° F., at which temperature they were held for two hours. When the crucibles were removed from the furnace at the end of this two-hour holding period, it was found that there was much unmelted batch at the surface, and that there was some molten glass in the bottom of the crucibles. The glass set up very quickly when drawn from the crucibles on an iron rod. No. 196 was more completely melted than was No. 34.

Similar batches were melted in a gas-fired furnace in the Research Laboratories of the Armstrong Cork Company and were held at 2680° F. for one hour, after which they were poured into molds to form plates. The batches behaved in the normal manner of modern container glass compositions as

[86] [Mr. Leavy (see above) suggested that in the manufacture of the ring-weights the bit of molten glass was gathered on a punty and was shaped around a wooden rod, which was then removed, leaving the characteristic hole in the "doughnut." Traces of overlapping of the periphery of the ring are apparent in some of the specimens. One intact piece, which Dr. Matson did not have the opportunity to examine (No. 110), distinctly exhibits the mark of the punty on the outside bottom surface, that is on the external surface opposite the stamp. GCM]

they melted. They poured readily and were quite uniform in quality and were free of stones or very coarse striae. Both glasses contained many fine seeds, far more than are acceptable in modern compositions. These would be eliminated today by the addition of suitable fining agents in the glass batch. Fine seeds are very common in the Arabic glass. Even when there are not large bubbles in the weights and stamps, there are many fine seeds which are often clustered at the surface or aligned in streaks.

The experiments showed that the glass was not completely melted at 2000° F., but at 2680° it was in an excellent condition, free of bubbles, stones, streaks of seeds and cords. The melting temperature used in the eighth century lies between these two limits. After the glass is molten the viscosity decreases very rapidly with a temperature rise, the glass becoming more and more fluid. The stamps and weights bear evidence that the glass flowed but was rather viscous and poorly fined. As a guess, 2300° to 2500° was about the range of melting temperatures used. Time is also a factor to be considered in maturing a glass, for within limits, a short time at a high temperature has the same effect as a longer time at a slightly lower temperature. Time may not have been an important factor in the eighth century, but fuel was, and the glasses show by their imperfection that they were not kept in the furnace very long after they became molten.

Classification by Physical Properties

The *index of refraction* and *specific gravity* are two properties that together can characterize a glass, the values of both being dependent upon its chemical composition. Several glasses of different compositions may have about the same index of refraction, and similarly, more than one glass formulation may have the same specific gravity, but the combination of the two defines a glass rather well. Either alone may give a false picture of the uniformity or dissimilarity of a group of

glasses. The specific gravity is much more sensitive to composition change than is its index of refraction. Both are affected by the degree of annealing a glass receives.

The index of refraction of the Arabic glasses was determined by examining a minute amount of powdered glass scratched with a diamond point from the back of each weight or stamp under a petrographic microscope with a series of index liquids. The results are given in Table 1. Of the thirteen green glasses, eleven had essentially the same index, 1.511–1.512. The two exceptions were the glasses that had weathered badly—No. 164, a ring-weight with a completely pock-marked surface caused by weathering, and No. 196, a vessel stamp which had an illegible inscription. Both these glasses had indices higher than those of the major group. The two blue glasses had still higher indices. The amber weight fell in with the green group.

In measuring the indices it is essential to take the glass samples from surface areas that are not contaminated by iron scale or by dark green streaks formed by iron going into solution, because the addition of iron to a glass rapidly increases its index of refraction. If the glass powder were taken from an area of high iron concentration, a false index value would be obtained. In doubtful cases, the index should be checked at several spots on the surface. Care must also be taken not to scratch the surface for a sample in a weathered area, for then too low an index value will be obtained because some of the ingredients have been leached out of the glass in weathering and the silica tends to hydrate, forming opal. In the weathered areas of Nos. 34, 164 and 196 there is brown glass that has an index of refraction lower than 1.48. In relatively crude glasses, such as those being studied, it is well to check the index of several glass grains preferably scratched from chipped areas on the object, so that the original surface conditions both as to contamination and degree of annealing will not affect the results. Variations that show up as unhomogeneous streaks or

TABLE I

Glass No.	*Type and Date*	*Color*	*Index of Refraction*	*Apparent Specific Gravity*	*Notes*
104	¼ *qisṭ* vessel stamp. 780/781 A.D.	Olive-green	1.511	2.327	Stones Red clay on surface
1	½ *dīnār* coin weight. 709–714 A.D.	Blue-green	1.512	2.494	
3	¼ *qisṭ* vessel stamp. 709–714 A.D.	Blue-green	1.512	2.453	
12	20-*qīrāṭ* coin weight. 720–734 A.D.	Blue-green	1.512	2.477	
34	1 *raṭl* ring-weight. 740/741 A.D.	Blue-green	1.512	2.432	Chemical analysis Stones
53	½ *raṭl* disk-weight. 754–775 A.D.	Blue-green	1.512	2.430	Stones
71	19-*kharrūbah* coin weight. 759/760 A.D.	Blue-green	1.512	2.467	
75	*qisṭ* vessel stamp. 759/760 A.D.	Blue-green	1.512	2.474	
94	*raṭl* ring-weight. 773–776 A.D.	Blue-green	1.512	2.445	Stones
139	24 *qīrāṭ* coin weight. Early 8th c.	Blue-green	1.512	2.446	
176	⅛ *qisṭ* vessel stamp. Probably early-middle 8th c.	Blue-green	1.512	2.445	
95	⅓ *dīnār* coin weight.	Amber	1.512	2.512	
196	illegible vessel stamp. Probably early-middle 8th c.	Pale green	1.525	2.520	Chemical analysis Weathered
164	illegible ring-weight. 8th c.?	Pale blue	1.526	2.503	Badly weathered
107	*dīnār* coin weight. 808–810 A.D.	Deep blue	1.528	2.546	
132	*dirham* coin weight. Probably late 8th, early 9th c.	Deep blue	1.529	2.560	Weathered

lines, termed cords or striae, frequently occur in glasses such as those being studied that were not melted at a temperature high enough to obtain complete uniformity in composition. They will differ in index from the main body of the glass and must be recognized as atypical.

The true specific gravity of glasses can be determined only on pieces of glass that contain no seeds or stones, or on finely powdered glass. As has been noted, the Arabic glass was quite seedy, some contained stones, and the individual pieces could not be broken to produce sufficient powder for gravity measurements, so only the apparent specific gravity could be measured. This was done by weighing each piece in air on an analytical balance and then determining its loss of weight in water, from which, by Archimedes' principle, its volume could be calculated. The specific gravity is the ratio of the weight of an object to that of an equal volume of water. Obviously, if there are air bubbles in the glass, the volume will be larger than that of perfect glass, and the apparent specific gravity will be less than that of the true specific gravity by an amount dependent upon the volume of the air space in the glass occupied by seeds and larger bubbles. Since this trapped air space varies in the several weights and stamps that were studied, it is to be expected that the apparent specific gravities will range in value even if the true specific gravities of the several glasses are alike. That this is the case is demonstrated in Table 1. The amount of iron scale on the glass will also affect the results.

The ten blue-green glasses that have the same index of refraction have specific gravities of 2.43 to 2.49. An analysis of this group, as shown in Table 2, is informative. The big pieces of glass used to form the ring- and disk-weights, Nos. 34, 53 and 94, contain many large-sized bubbles and some stones. Therefore their low value of 2.43 is not surprising, for the air spaces enlarge the volume of each piece and thus reduce the specific gravity. When the smaller glass objects are grouped as

TABLE 2

Blue-green glasses with an index of refraction of 1.512

Glass No.	*Type*	*Apparent Specific Gravity*	*Weight, gms.*	
53	Disk-weight	2.430	88.3368	
34	Ring-weight	2.432	85.6290	
94	Ring-weight	2.445	123.9397	
176	Vessel stamp	2.445	9.1282	
139	Coin weight	2.446	4.7690	Very seedy
3	Vessel stamp	2.453	9.6105	
71	Coin weight	2.467	5.2540	
75	Vessel stamp	2.474	19.2599	
12	Coin weight	2.477	3.9935	
1	Coin weight	2.494	2.1103	

to specific gravity, and their seed content and size are listed, it is seen that the two smallest coin weights, which are also relatively seed-free, have the highest values of 2.477 and 2.494.

The intermediate group consists of two vessel stamps that contain seeds, and a very seedy coin weight, No. 139.

The high-gravity group contains the coin weights and one vessel stamp. Weight No. 1, the smallest of the group, most closely approaches a seed-free glass in appearance. Therefore its value of 2.494 is probably not much lower than the true specific gravity of the blue-green series.

The amber weight, No. 95, is also very small. It has a higher specific gravity than the blue-green glasses, which indicates some difference in composition, but its uniformity in index of refraction with the preceding group suggests that its composition is very similar. The relationship of amber and green glasses has been discussed in the section on Color.

Vessel stamp No. 104, whose index of refraction, 1.511, is very close to that of the major group, has a much lower specific gravity. This is a significant difference, indicating a glass com-

position dissimilar from that of the large group, because the glass has relatively few seeds and large bubbles. It is also olive-green in color as opposed to the more common blue-green group. This difference would not have been detected had only the index of refraction been measured. Dr. Miles assigns a late eighth-century date of 780/781 A.D. to this one-quarter *qisṭ* vessel stamp. It might be that the change in composition is atypical, but if it were found to be characteristic of the late eighth-century weights, it could indicate a change in formula due to differences in the raw materials used, the whim of the overseer, or a shift to a different glass factory than had previously made the weights. This stamp had red clay in its crevices, while the other stamps and weights all showed traces of having been buried in yellow clay. A microscopic examination of this red clay showed that it contained chalcedony (a very finely crystalline form of silica) and calcite. A grain of chalcedony with some calcite intermixed was also trapped on this stamp. The red clay would appear to have come from a region where there was limestone (the rock form of the mineral calcite). Such a requirement is of course easily met with in Egypt. Chalcedony is frequently found in limestone. These differences are enough to suggest that this vessel stamp came from a source other than that of the rest of the series.

The two glasses that showed the most weathering, Nos. 164 and 196, had indices of refraction and specific gravities greater than the rest of the blue-green series. This confirms the visual evidence of surface decomposition which indicates that these glasses were made from a different batch formula than the others.[87]

The two blue glasses had still higher values of the two physical properties measured. They do not appear to be exactly alike, as No. 132 has weathered surface areas while No. 107 has not.

[87] See footnote 79, p. 33, above.

Annealing

Strains develop in glass when it is cooled too rapidly from its molten state down to lower temperatures where it is rigid and the strains are "frozen in." Well annealed glass is cooled slowly and does not contain serious strains or stresses. Poor annealing usually results from fast cooling, and glass so treated can crack easily. Two of the glasses, No. 12, a coin weight, and No. 3, a vessel stamp, contained several internal cracks which indicate that they were poorly annealed, and the strains were later released by the fracture of the glass.

The degree of annealing can be determined by looking at the glass through a Polaroscope. The Arabic glasses that are thin enough to transmit light were so examined. (The thick pieces, such as the ring-weights, absorbed most of the light, and strain patterns could not be seen.) All the pieces were strained, the area of greatest concentration of stress being around the raised rim of the coin weights and vessel stamps, which was the region that cooled most rapidly when the weights and stamps were formed.

Chemical Analyses

Composition

There are many analyses of ancient glasses in the literature, most of which have been summarized by Partington.[88] They all indicate that the compositions used in the past, at least of glasses that have resisted weathering and so existed to the present time, are mostly of the general soda-lime-silica type that is still used today in the manufacture of bottles and plate- and window-glass. The relative proportions of soda, lime, and silica that can be successfully used in glassmaking are rather limited, so it is not surprising that the range in compositions is small.

[88] J. R. Partington, *Origins and Development of Applied Chemistry*, London, 1935.

When Dr. Miles asked me to analyze one of his glass weights that could be sacrificed for that purpose because the inscription was illegible (No. 196), I pointed out the pattern uniformity that is likely to be found in glass compositions of this type and indicated that it would be well to examine a representative sampling of the weights and stamps from the period being studied. Their indices of refraction and specific gravities could be measured, and if these data showed that the group was consistently of one type of glass, then an analysis could be made of No. 196 with good assurance that it was a representative example. Dr. Miles then furnished me such a sampling and indicated that on the basis of inscriptional evidence, the weights and stamps were all made in Egypt, possibly in one shop. It was immediately noted that No. 196 showed considerable surface weathering, a characteristic that was lacking on most of the other pieces. The measurement of the physical properties showed that No. 196 was quite different from all except one other specimen in the group of sixteen. Therefore an analysis of it would not give a fair indication of the glass composition used in eighth-century Cairo for metric purposes.[89] Fortunately, one of the large ring-weights, No. 34, which was a typical glass of the major group, had excess glass on a broken portion of the ring from which a sample could be removed without endangering the inscription. A 2-gram sample was therefore cut out with a diamond saw.

The physical properties of Nos. 196 and 34 were considerably different, so it seemed of interest to try to determine the basis of this variation. Miss M. C. Parrish of the Glass Section of the Research Laboratories of the Armstrong Cork Company, Lancaster, Pennsylvania, most kindly analyzed the two glasses. I wish to acknowledge with much appreciation her aid in this study. Her methods were those she employs daily in the chemical analysis of modern commercial glasses.

The results of Miss Parrish's analyses are shown in Table 3.

[89] See footnote 79, p. 33, above.

The immediate tendency when one obtains a new analysis of an ancient glass is to compare it with those already published. Before turning to this confusing pleasure, there is much that can be observed from the present analyses alone. In summary, it can be said that the two glasses are quite dissimilar in composition, yet appear to have been made from the same raw materials. No. 34 is a glass very low in lime (CaO) and rich in alumina (Al_2O_3) and iron (Fe_2O_3) as compared with No. 196. The latter is a normal composition that is quite similar to some in use today and some known from antiquity that will be cited later.

TABLE 3

	No. 34	*No. 196*
SiO_2	71.40	68.86
FeO	0.82	.36
Fe_2O_3	1.11	.61
(Total iron as Fe_2O_3)	(2.02)	(1.01)
Al_2O_3	4.75	1.63
CaO	2.74	10.02
MgO	0.81	1.57
Na_2O	16.98	15.88
K_2O	0.27	.05
MnO	0.30	.19
CuO	0.10	0.00
SO_3	0.12	.19
Loss on ignition	0.28	.21
SnO	.00	.00
PbO	.00	.00
P_2O_5	.00	.00
	99.68	99.57

Glass Batch Materials

An idea of the ingredients used to make up a glass batch can be obtained from a study of the chemical analysis of the finished glass. Lucas (*op. cit.*) has ably discussed the origin and chemical composition of most of the Egyptian glass batch materials, so his points will not be repeated here.

Sand. The major building block of soda-lime-silica glasses is SiO_2. Most of it is added to the batch as sand which is usually over 99% SiO_2. It may contain some impurities—other mineral grains mixed in with the quartz and flint particles that make up most sands, and some clay and iron stain that may coat the sand grains. Some of the Al_2O_3 and Fe_2O_3 in the glass is probably derived from the impurities in the sand. Sand is the cheapest and most readily available of the raw materials and the exact amount used can be varied within fairly wide limits without spoiling the glass. The amount present in Nos. 34 and 196 is in the normal range of modern soda-lime glasses—close to 70%.

Limestone is the second of the foundation stones of a glass. It furnishes the CaO (and the MgO often associated with it) and acts as a stabilizer which causes a glass to stiffen rapidly as it cools. It also improves the resistance of glass to attack by water, thus greatly aiding durability. Modern glasses contain 6–13% CaO and MgO, so the 11.6% in No. 196 falls within the normal range. That of No. 34, however, is phenomenally low—3.55%. Usually a glass composition with such a low amount of lime and magnesia would not be practical, but the high alumina and iron content increases its stability, and in fact it is far more resistant to weathering than is No. 196. The low lime content of No. 34 makes it unique when compared with most other analyses of Egyptian glasses. It may be that no lime was intentionally added to the glass batch of No. 34, for Lucas (p. 119) states that much of the sand of the northern shore of Egypt contains calcium carbonate as an impurity. Thus the composition of the sand might be responsible for the lime found in the glass.

Many limestones are of a dolomitic variety which contains a variable amount of MgO with the CaO. Often the two are present in equal proportions. Analyses published by Lucas and Neumann show that MgO is a common constituent of Egyptian glasses. In some, such as the two here analyzed, it is

only a very minor ingredient. Since both the CaO and the MgO are derived from a limestone, the ratio of the two is quite constant for any given type of limestone and can serve as an index of the type of limestone used. It is possible that the place of manufacture of many Egyptian glasses could be traced if the CaO:MgO molecular ratio of the Egyptian limestones was found to be characteristic of certain localities, for the same ratio would hold in glasses made from such limestone. The ratios for the two glasses analyzed will be compared with those of published analyses in the following section. These two glasses have a remarkably low MgO content in contrast with most Egyptian glasses.

It is probable that the low magnesium limestone used in the two Arabic glasses came from the vicinity of the glass factory. This could have been the general region of Cairo, for Lucas says (p. 362), "Out of 132 specimens of limestone from the neighbourhood of Cairo analyzed by the author, all contained magnesium carbonate, but only 15 contained more than 5 per cent and only two contained more than 20 per cent."

Soda is the third dominant constituent. The alkali (Na_2O and K_2O) serves as a flux in a glass batch, making the mixture melt down more rapidly and uniformly. High soda glasses melt at fairly low temperatures and the various batch ingredients are easily dissolved with its aid. Such glasses may contain as much as 23% Na_2O; they weather easily, being quickly attacked by water. The Na_2O content of the two glasses analyzed is moderate. Many old Egyptian glasses contain much more, a few somewhat less. A significant feature of the present analyses is the almost complete absence of potash (K_2O), which is the second alkali and is often associated with Na_2O. The Na_2O:K_2O ratio may be a useful clue to the origin of the alkali, for in many Egyptian glasses the K_2O content is appreciable.

Both the alkalis Na_2O and K_2O are abundant in plant ashes

which are often used as the source of alkali in old glasses, even those of the past few centuries. Another type of alkali found in Egypt is natron, which is obtained by evaporation from the waters of the Wadi Natrun, a depression in the Libyan desert about forty miles northwest of Cairo. The material is formed into cakes and was an item of commerce in antiquity, as it is today. Natron is a mixture of sodium carbonate and bicarbonate. Lucas' analyses of ancient and modern natron (pp. 430–431) show that no potash is present in the salts, although in the text (p. 121) he mentions it as "present in very small amount." He makes the point that when very little K_2O occurs in an Egyptian glass, it may be assumed that natron was used as the source of alkali, "but where there is a notable amount of potash this points to the use of plant ashes or to a mixture of these with natron." Neumann's analyses show that there is appreciable K_2O in most of the XVIIIth Dynasty glasses from Tell-el-Amarna and Thebes, but the majority of the pieces from the Island of Elephantine that date from 200–100 B.C. and those from Alexandria lacked K_2O or had only a very small amount. The same is true of the two Arabic glasses being studied, although Lucas' report on glass from Fostat (p. 422) shows appreciable potash in three of the four pieces analyzed. Linke's analysis of fourteenth-century glass from Cairo that is listed in Table 4[90] also shows potash. One would have to investigate the $Na_2O{:}K_2O$ ratio of plant and wood ashes of Egyptian flora before deciding whether or not ashes, or a mixture of natron and ashes, was used in the potash-bearing glasses. From the evidence cited above, it seems likely that natron was the source of the alkali in our two Arabic glasses. Neumann (*op. cit.*, p. 780) says that the Egyptian soda came from the soda sea at Wadi Natrun in Nubia. The variation in the ratio of the two alkalis in the published glass analyses would suggest that more than one source of alkali was used in Egypt. Some could have been supplied from plant ashes such

[90] See p. 63.

as the seaweed mentioned by Pliny in his account of the origin of glassmaking. The soda for the two Arabic glasses analyzed must have come from a rather pure source, possibly the Wadi Natrun.

Alumina. The Al_2O_3 content of No. 34 is remarkably high for a glass, because it is a refractory material that does not go into solution readily. It accounts for much of the resistance to weathering of the weights and stamps made from this glass.

Clay would seem to be the obvious source of Al_2O_3, and a small amount may have come into the glass as clay adhering to sand grains, but clay does not melt easily in a glass batch. It is possible that clay was an intentional batch ingredient if the glass was made in two stages. After the first melt there would be much insoluble material present and the chunks of usable glass would have to be separated from it when the melt was cool. This selected glass would then serve as a major component in the second melt from which the glass objects were formed. There are indications in ancient texts that such a procedure was followed, because many of the formulas call for the use of one or more special glasses in compounding a batch. If clay were used in the first composition together with much soda which would help dissolve it, a high alumina glass could result from such a two-step process of glass preparation.

Today alumina is compounded in a glass by using a crushed rock that contains considerable feldspar, as it has a high alumina content. The various granite and syenite rocks of Egypt would do for this purpose, but so far there is no evidence that such rocks were used. It might not be necessary to crush the rock. Geological weathering processes might have rendered this service and added the broken-down rock fragments and their mineral constituents to the sands, which would then, in certain localities, have a high feldspar content and consequently the glass would contain alumina. Without a knowledge of the Egyptian sands, such a supposition is of the armchair variety

and open to question. The facts would seem to be: The alumina content of Egyptian glasses varies widely in the range 0.7–5.0%. Clay is not a good batch material for glasses. Feldspar is. Feldspar as a free mineral or as part of a rock aggregate could have been used in the glass (*a*) intentionally, or (*b*) unintentionally as an ingredient of the sand, if Egyptian sands are found to have a fairly high feldspathic content. I do not have the library facilities available at present to undertake a search of the geological and mineralogical literature for information on this point.

Another small source of alumina could be the attack of the clay crucible in which the glass was melted. Although clay is relatively insoluble in glass, small amounts can be dissolved especially as the soda melts down and begins to attack the surrounding materials, both batch and pot.

Iron. The iron content is very high according to present standards. It is a strong colorant and is therefore kept at a minimum in most modern glass batches so as to avoid a green tint in the glass such as can be seen in the edge of a sheet of plate glass. The iron appears to have been intentionally added to the two Arabic glasses. This is not strange, for the Assyrian recipe for green glass calls for the addition of iron rust to the batch.[91] This would not be difficult to obtain. The iron scale seen in the Arabic glass did not come from the original batch addition because iron goes into solution readily in a glass and the flakes had sharp, not rounded, edges, indicating that they had not been in contact with the hot glass very long. Some of the iron could also be present as an impurity in other batch materials, but there is no doubt of the intentional addition of iron to the batch, especially in No. 34.

In most chemical analyses the total amount of iron is reported in the form Fe_2O_3, but this does not mean that all of it is present in that state of oxidation. In the present analyses,

[91] R. Campbell Thompson, *On the Chemistry of the Ancient Assyrians*, London, 1925.

both forms of iron oxide, the ferrous (FeO) and the ferric (Fe_2O_3), are reported as well as the total iron calculated to Fe_2O_3, because the relative proportions of each have a great influence on the color of a soda-lime glass. A high proportion of ferrous iron imparts a pale-blue color to the glass, while ferric iron makes it green. The ratio of the two forms of iron is in part controlled by the glass composition, but it is also strongly influenced by the degree of reduction that a melting batch and molten glass receive from organic material in the batch and from the furnace atmosphere. If too much carbon is present or the atmosphere is too reducing, the glass will be amber in color.

No. 34 contains twice as much iron as No. 196, so its color is a much deeper green. The blue tint in both green glasses is due in part to the presence of a sizeable proportion of ferrous iron as well as to copper. Iron acts like alumina in improving the weathering resistance of glasses, so the combined high iron and alumina of No. 34 more than counteract its low lime value and establish it as a good weather-resistant glass.

Manganese. The purple color of many soda-lime glasses is due to manganese. When it is present with iron or copper, it merely deepens the green or blue color natural to those glasses. Manganese is a common constituent of Egyptian glasses, as much as 2% being present in some. The very small amount that appears in the two glasses analyzed could indicate that it occurs as an impurity in another material such as the iron, for it has very little, if any, effect on the color of the glass. Its presence may be of traditional or symbolic significance, for the importance of ritual in technical operations such as glass-making must not be overlooked. Thompson's translation of the Assyrian directions for the preparation of a glass-melting furnace supplies ample evidence. A favorable day in a fortunate month must be selected, embryos are used in the ceremonies, strangers and unclean people are prohibited from the area, and incense and beer are sacrificed. The Egyptians

doubtless had analogous customs that might well involve a pinch of mineral ingredients as well as beer and incense. By Arabic times the significance of the addition of manganese to the batch may have disappeared, but the tradition could still have been in force. This is sheer conjecture, but the non-material elements of a culture often influence or even dominate the material.

A spot test showed that manganese was present as a minor ingredient in most of the green glasses and in the two blue specimens.

Copper. Only a small amount of copper, 0.1%, is present in glass No. 34 and none was found in No. 196. A spot test showed that copper was present in all the blue-green glasses of the major group from which No. 34 was selected as representative. In Neumann's analyses of green glasses, much larger amounts of copper were reported if it was present at all. (Possibly colorimetric tests by which very small quantities can be detected were not used for copper in Neumann's work.) In larger amounts, copper would give a blue color to the glass if the coloring action of the iron were not too strong. The small quantity present might indicate that a blue frit containing copper as its coloring agent was used as one of the batch ingredients, for there is hardly enough copper in the glass to consider it an intentional addition to the batch. Copper-blue frits have been found in many excavations, and even the Assyrians used frits in their glass formulae. (R. Campbell Thompson, *op. cit.*) Another source might be cullet (scrap glass) that is remelted with the batch to speed up the rate of melting and to conserve materials. A small amount of copper-blue cullet could account for the 0.1% copper oxide, but the consistent appearance of this trace of copper in all the green glasses makes the use of a frit seem more probable.

Sulphur, reported in the trioxide form as SO_3, is present in the same percentage range (0.1–0.2%) as in modern soda-lime glasses. Its presence may be due to sulphur-containing

compounds in the glass batch or to sulphur products in the fuel used to melt the glass. Neumann reports sulphur contents as high as 2.4% SO_3 in the older Egyptian glasses from Tell-el-Amarna. In such cases it is quite possible that all or much of the lime in the glass batch came from gypsum ($CaSO_4 \cdot 2H_2O$) rather than from limestone ($CaCO_3$), or from sodium sulphate (Na_2SO_4), which can be a constituent of the alkali.

Tin and *lead* are found in many ancient glasses and glazes, particularly those of the Arabic period, so their presence was sought in the two glasses analyzed but was not found. *Phosphorus* was reported as present in Arab glass from Fostat,[92] but tests for it gave negative results.

This detailed consideration of the probable batch materials used to prepare the two glasses that were analyzed may be summarized as follows:

Sand—possibly contaminated with feldspar, limestone and clay.
Soda—probably natron from the Wadi Natrun.
Limestone—a low-magnesium variety such as is found near Cairo.
Iron—source could be either an ore or an ochre.
Frit—a deep-blue glass containing copper and perhaps manganese.

Glass Formula

It is possible to calculate the batch formula from the chemical analysis of a glass if the chemical composition of the several batch ingredients is known. They can only be guessed at in the present instance, but if it is assumed that a soda feldspar was the source of the alumina, and the possible presence of frit (which is a colored glass and would contain many of the glass ingredients) is ignored, then approximate batch formulae that would give glasses of the compositions found by Miss Parrish in her analyses would be:

	No. 34	*No. 196*
Sand	10	8
(Feldspar)	5	1

[92] Lucas, *op. cit.*, p. 422.

Soda	5	3
Limestone	1	2
Iron	2/5	1/8

These formulae can only serve as an approximate indication of the simple proportions used in compounding the glass batches.

Comparative Analyses

The outstanding work in the field of ancient glass analyses is that of Dr. Bernhard Neumann. He and his associate, Miss Kotyga, analyzed over 100 glasses of fairly well-established provenience and evaluated the results of their work critically. There are a few good analyses in the older literature, but many of the early workers did not clearly state the source and date of their analytical samples (often they were not completely known). A statement, for example, that a piece was "Egyptian glass" is not particularly helpful. Some analysts, to judge from their published results, did not test for all the glass components, especially for those such as copper that might be present in very small amounts. Often it is the minor ingredients that define the character of a glass. Neumann's data are the only trustworthy large group of ancient glass compositions that can be used for comparison with our own results. Two other analyses are also of interest and will be examined.

There are two ways of comparing analyses that will be used. (*a*) The general similarity of the composition patterns will be sought, for exact agreement cannot be expected. (*b*) The ratios of ingredients such as CaO:MgO and Na_2O:K_2O characterize glasses made from certain raw materials that may possibly be typical of specific regions.

In general pattern both the glasses analyzed belong with the good glasses that adequately resist weathering. They contain 67–70% SiO_2 and 12–17% Na_2O. Many of the earlier glasses such as those from Tell-el-Amarna and even several of the Roman glasses of the first several centuries A.D. have

a lower silica content (56–65%) and a much higher alkali value, that may be as high as 22% Na_2O. Within the group of good glasses with high silica and moderate soda figures there is much variation, especially in the lime and alumina content. The two glasses of most immediate interest to us represent two extremes in this series—No. 34 with high Al_2O_3 and very low CaO, and No. 196 with relatively low Al_2O_3 for a good glass but with high CaO. The pattern of what is here termed "good" glass is not limited in time or space, as the analyses in Table 4 show. It is found at Thebes in 1500 B.C., at Pompeii, Fostat, and Samarra. Roman glasses other than that from Pompeii could be cited, but this survey must be limited to Arabic types. Before discussing the data in Table 4, the second method of scrutinizing the glass compositions will be presented.

The significance of ratios has already been considered in the preceding section. There it was pointed out that limestones vary in their CaO and MgO content, so the ratio of these two oxides may help characterize the type of limestone used in the glass batch. The two glasses analyzed had a low magnesia content, hence the molecular ratio CaO:MgO is high, 2.45 and 4.6 for No. 34 and No. 196. Both these glasses also have an extremely low K_2O content, although many Egyptian glasses contain much more. This alkali relationship can serve as a good comparative tool.

Thus far in our discussions the differences between Nos. 34 and 196 have been emphasized. In comparing the compositions of these glasses with a large group of analyses, one is more impressed by their basic similarity in pattern than by differences which tend to be relegated to a less prominent position in the vitreous picture. Both glasses were made from the same general stock of raw materials, as a study of some of their ratios has shown. No. 34 is representative of the major group studied, but No. 196, also of local origin, may represent a later series of glasses or merely a different workshop

TABLE 4

	No. 34	*No. 196*	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*j*
SiO_2	71.40	68.86	67.82	67.80	68.45	67.47	70.5	66.93	65.86	68.73	67.8	69.43
Fe_2O_3	2.02	1.01	1.08	0.92	0.89	0.14	1.9	1.44	1.19	0.47	4.0	1.15
Al_2O_3	4.75	1.63	4.38	3.22	3.85	4.98	0.8	2.08	2.16	1.69		3.55
CaO	2.74	10.02	4.03	3.80	9.92	10.30	7.8	3.62	5.95	8.62	2.9	7.24
MgO	0.81	1.57	2.30	2.89	1.18	0.76	1.2	5.42	4.55	4.15	0.9	—
Na_2O	16.98	15.88	13.71	16.08	14.79	15.36	16.1	15.26	12.84	12.54	23.5	17.31
K_2O	0.27	0.05	2.34	2.08	0.21	0.13	tr.	2.62	2.70	2.87		—
CuO	0.10	0.00	1.96	1.51	—	0.31	—	1.76	2.66	—	tr.	tr.
MnO	0.30	0.19	0.91	0.44	0.75	0.51	1.1	0.28	0.88	0.74	0.9	0.39
SO_3	0.12	0.19	0.98	1.01	—	—	—	0.52	1.72	—	—	—
SnO_2	—	—	—	0.51	—	—	—	—	—	—	—	—
P_2O_5	—	—	—	—	—	—	0.6	—	—	—	—	—
CaO:MgO	2.45	4.60	1.25	0.94	6.00	9.68	4.63	0.48	0.93	1.48	2.3	—

a Thebes, 1500 B.C., dark blue, Neumann, No. 72.
b Gorub Medined, 1500 B.C., dark blue inlaid with yellow and gray, Neumann No. 95.
c Alexandria, late Egyptian, dark blue, Neumann No. 23.
d Alexandria, late Egyptian, dark blue, Neumann No. 24.
e Fostat, analyzed by J. Clifford, Lucas, p. 422.
f Samarra, dark blue plate, Neumann No. 83.
g Samarra, emerald green window glass, Neumann No. 84.
h Cairo, 14th century, Linke in Schmoranz.
i Arab Glass, blue, Parodi quoted by Lucas, p. 420.
j Pompeii, green, Neumann No. 47.

that is not well represented in the collection. Dr. Miles can best comment on this point.[93]

The pattern of "good" glass was not new in Roman times, but was in use in the XVIIIth Dynasty, as the examples from Thebes and Gorub Medined demonstrate. Neumann points out that the glasses of the XVIIIth Dynasty were technically much better and more durable than all the known glasses of the next 2000 years. The tin reported in No. 95 (Neumann) is from the surface strip decoration of the glass. The SO_3 probably comes from the alkali sulphate, Na_2SO_4. There is a marked similarity in the pattern of these two glasses with the two from Alexandria that Neumann analyzed. In batch materials, however, the latter two agree with the Arabic glasses, for they are low in MgO, K_2O, CuO and SO_3. They have both the high Al_2O_3 of No. 34 and the high CaO of No. 196. These glasses were certainly made in the same tradition as those of the Arabic weights and stamps.

An Arabic glass from Fostat that was analyzed by J. Clifford and reported by Lucas (p. 422) also belongs in our group, for it conforms to the general pattern, has a high calcium to magnesium ratio and lacks K_2O. It is very low in Al_2O_3, but this is in part compensated for by its high iron content.

It is of interest to compare the glass compositions made at Samarra less than a century later with those from Egypt. This can be done because Neumann analyzed five pieces. Three of them contained a small amount of lead but were otherwise of the same general composition as the two shown in Table 4. These glasses are lower in SiO_2 and much higher in MgO and SO_3 than the Egyptian glasses. If the CaO:MgO ratio were found to hold true in other Iraqi glasses and glazes, this could be a means of determining the place of origin of questionable pieces, providing a fragment could be spared for chemical analysis. The basic pattern of the Samarran glasses is the same as that of Arabic Egypt.

[93] See footnote 79, p. 33, above.

An early (1896) chemical analysis accompanied by an excellent discussion is that of Dr. F. Linke,[94] who studied a fragment of glass thought to have come from the fourteenth-century mosque of Sulṭān Ḥasan in Cairo. As can be seen in Table 4, this glass adheres to the general pattern, but was made from dolomitic limestone and a mixture of alkalis. It has a high lime-magnesia content and is low in iron.

The series of Arab glass analyses made by Parodi[95] were republished by Lucas (p. 420). Most of his examples have a high alkali content (22–31%). One of the analyses is listed in Table 4 because the high SiO_2, Fe_2O_3, and Al_2O_3 content, together with the low CaO and MgO, makes this glass very similar to No. 34 except for the high alkali.

The Pompeian glass is very similar in composition to the Arabic. This is an excellent example of the fact that the basic formulae for easily workable yet durable glasses are very restricted in their possible variations among the major ingredients.

This survey of the chemical literature of ancient glass has shown that No. 196 is similar to other Arabic and Roman glass in composition, particularly if the source of the limestone and the alkali is disregarded. No. 196 was a rather unique specimen among the sixteen samples studied in terms of its index of refraction and specific gravity. Possibly it was an imported piece from another part of Egypt or the Middle East. Its inscription was obliterated, so we shall never know.[96] No. 34, the glass chosen for analysis because in its physical properties it was typical of the majority of the samples studied, finds no compositional counterparts as a glass of very low lime and relatively low alkali content.

[94] F. Linke, "Chemical Analysis," pp. 42–43, in: Gustav Schmoranz, *Old Oriental Gilt and Enamelled Glass Vessels*, Vienna-London, 1899.

[95] H. D. Parodi, *La Verrerie en Égypte*, 1908.

[96] See footnote 79, p. 33, above.

The search for analyzed compositions similar to those of the two glasses being studied has shown that a general pattern of "good" quality glass with a relatively low alkali content has existed at least since the time of the XVIIIth Dynasty, but that glasses with a high alkali content were also made at the same time. This could mean that even in Arabic times, the proportions of sand, alkali and limestone used were not critical, yet this hardly seems likely when one recalls that the Assyrians had definite glass formulae and that the Arabs were using an accurate system of weights and measures. It is more probable that different traditions existed in different glass factories. Each glassmaker would work out or inherit a formula by which he could successfully manufacture his ware. Unless the alkali content were extremely high, the weathering qualities of the glass would not be important during the lifetime of the owners, but would only serve archaeologists as a guide to variations in glass compositions. Secret formulae are still in use today for many products, such as, for example, glasses, glazes, cough drops, and soft drinks.

We must be careful to place the correct emphasis on the variations in glass composition. They can indicate different places of manufacture and sources of raw materials and thus give valuable information as to trade relationships of different regions and the constancy of ceramic traditions within a region. They can also be used to trace the improvements in ceramic compositions as experience was gained and as experimentally minded artisans developed more satisfactory products.

A thorough study of the manufacture of glass in any region must include a detailed knowledge of the composition and variations in the raw materials that could be found locally and of the ingredients indicated by literary sources to have been used in trade and imported. Such a program, while ideal, is not very practical because of the time and cost involved. It takes two full days at a minimum to analyze a

glass completely. Egyptologists are most fortunate that a competent chemist like Mr. Lucas was able to spend many years of his life studying the technical processes of ancient Egypt. His pioneer work is of tremendous value and will serve as a cornerstone for all future technical studies. While few people with adequate training will be able to devote their full energies to such work, it is to be hoped that many ceramists and chemists will become interested in the problems of technological evolution and will actively cooperate with archaeologists.

Since technical studies will never be abundant, it is most essential that the material examined come from well-stratified deposits that have been competently excavated or from material, as in the present case, that bears a datable inscription. It is also important that the materials taken for detailed study be selected only after a large and representative group has been examined carefully and given physical tests such as the measurement of the index of refraction and apparent specific gravity. In the current study such tests showed that glass No. 196, which Dr. Miles supplied for analysis, was not chemically representative of the major group of stamps and weights.[97] Fortunately, it was possible to remove for analysis a sample from one of the pieces shown by the tests to be typical (No. 34).

Cultural Considerations

Utilitarian objects such as these glass stamps and weights give little information from the technological side that is of use in evaluating the culture of the period, but it is perhaps well to record the few observations that can be made.

The adoption of glass as a material for the manufacture of weights and stamps in the eighth century marks a distinct technological advance. Clay had been used for similar purposes during classical times, but the use of glass shows that it

[97] See footnote 79, p. 33.

was no longer the luxury item that it had been earlier.[98] It was now a material in more common use. The glass used for stamps and weights was of much poorer quality than that prepared for making vases; of course the quality of both groups overlapped to some extent, depending on the care and skill of the workmen and the availability of fuel. The glass for stamps was not too well melted and fined, but it did not need to be; that for vessels had to be fired longer or at a higher temperature if the traces of unmelted batch were to be eliminated. Seeds were present in all ancient glass to some degree because fining agents that would sweep out the bubbles were not used, but the number of seeds could be reduced by using higher melting temperatures and longer periods of firing, both of which require more fuel.

Several shops made the glass stamps, to judge from the physical properties of the glasses. Three types of blue-green glass were recognized. A more extensive study might show a correlation between the type of glass and the place and date of manufacture. If the manufacture of such glass was a state monopoly, did more than one group have a license?[99]

The impression of inscriptions in glass with iron dies requires much skill and careful timing, for hot glass will rapidly

98 [Glass *exagia* were in use in later Roman and Byzantine times. See p. 3, above, and G. Schlumberger, "Poids de verre étalons monétiformes d'origine byzantine" in *Revue des études grecques*, VIII (1895), GCM]

99 [The passage from Maqrīzi cited above, p. 20, has some bearing on this question. It is not entirely clear whether all the weights, measures and other implements were made in the *Dār al-ʻAyār*, for, as Maqrīzi says, the merchants were summoned to the bureau to have their weights etc. tested, which might, but need not necessarily, imply that the weights and measures originated outside the bureau. Wherever they originated, periodic testing after their original acquisition would have been necessary. One thing is certain from Maqrīzi's statements: the master standards were kept in the bureau. In any case, the majority of the weights and stamps were official, as we know from the inscriptions; but concessions for their manufacture might have been let out by the *Dār al-ʻAyār* to more than one shop. GCM]

attack an iron surface and will soon obliterate the inscription on a die by the formation of a scaly oxide coating if the operator is inexperienced or careless.

The chemical analyses, both those made by Miss Parrish and those previously published, show that glass compositions were far from uniform and that the raw materials used varied even in the region of Cairo. This certainly points to a well-established industry in which there was still considerable individual shop freedom.

CATALOGUE

I. UMAYYAD AND 'ABBĀSID OFFICIALS

A. *Qurrah b. Sharīk*

Governor, 90–96 A.H.: 709–714 A.D.

1. *One-half dīnār.*

امر الا	Ordered the A-
مير قرة و	mīr Qurrah: wei-
زن نصف	ght of one-half.

Pale green. 22 mm. 2.11 grm.
PLATE I

2. *One-half raṭl of oil.*

Vessel stamp with legend within dotted border:

امر الامير	Ordered the Amīr
قرة نصف	Qurrah: one-half
رطل دهن	*raṭl* of oil.

Green. 32 mm.
PLATE XII

3. *One-quarter qisṭ.*

Vessel stamp:

امر الامير	Ordered the Amīr
قرة ربع	Qurrah: one-quarter
قسط	*qisṭ*,
واف	full measure.

Pale blue-green. 31 mm. Nies No. XII.
PLATE XII

Similar to *Fouquet Coll.*, p. 367, No. 96.

Qurrah b. Sharīk b. Marthad b. Ḥāzim b. al-Ḥārith al-'Absi al-Qaisi was Governor of Egypt from 3 (or 13) Rabī' I, 90, to the date of his death on 23 Rabī' I, 96 (20 Jan., 709–6 Dec., 714 A.D.). His duties as Governor included the functions of Finance Director. He was responsible for a number of important tax measures and reforms, and his adminis-

tration is especially well documented by the finding of the Aphrodito and other papyri. Recent writers have inclined to vindicate him of bitter charges of cruelty, impiety and oppression brought against him by the 'Abbāsid historians, who are believed to have falsely represented his character for partisan reasons. Among other things Qurrah's name is associated with the reconstruction and reorientation of the *qibla* of the famous mosque of 'Amr, the conqueror of Egypt.[1] One of Qurrah's measures that has a direct bearing on the glass weights was an instruction to the effect that *jizyah* payments were to be accepted only according to the standard weight of the Treasury, *'alā wazni bayt il-māl.*[2]

CORPUS: ½ *dīnār*
½ *raṭl* of oil
qisṭ
½ *qisṭ*
¼ *qisṭ*

[1] Grohmann, *Corpus* I², p. 51. Cf. Wüstenfeld I, p. 39; Adolf Grohmann, *s.v.* Ḳurra, in the *Encyclopaedia of Islām*; Johs. Pedersen, *s.v.* Masdjid, *ibid.*; Grohmann, *Egyptian Library*, I, pp. 25–31, III, pp. 11–43, 47–55; C. H. Becker, *Papyri Schott-Reinhardt*, I, *Veröffentlichungen aus der Heidelberger Papyrus-Sammlung*, III, Heidelberg, 1906 (all the papyri in this volume are Qurrah's); the same author's "Arabische Papyri des Aphroditofundes," in *Zeitschrift für Assyriologie*, XX, 1907, pp. 68–104, and "Neue arabische Papyri des Aphroditofundes," in *Der Islam*, II, 1911, pp. 245–268; Nabia Abbott, *The Kurrah Papyri from Aphrodito in the Oriental Institute* (The Oriental Institute Studies in Ancient Oriental Civilization, No. 15, Chicago, 1938), where, in addition to Qurrah documents, there is a biography of the Governor (pp. 57–69); H. Lammens, *Études sur le Siècle des Omayyades*, Beyrouth, 1930, pp. 305–323. The alleged scandal of Qurrah's drinking bouts in the mosque of 'Amr as a means of disposing of treasury surpluses, doubtless a fabrication of the Governor's 'Abbāsid maligners, is recounted in Lane-Poole, *History*, p. 26.

Qurrah's death is by some mistakenly placed in Ṣafar, 96, or in 95 (Ṭabari, II, p. 1305); cf. Zambaur, *Manuel*, p. 25.

[2] Cf. Grohmann, *Egyptian Library*, II, p. 47, and the references given there.

B. *Usāmah b. Zayd*

Finance Director, 96–99 A.H.: 714–717 A.D.
Interim Governor, 102 A.H.: 720–721 A.D.

4. *Fragment (¼ or less?) of disk-type weight.*

Fragmentary legend:

امر اسا	Ordered Usā-
[مة ب]ن زيد	[mah bi]n Zayd:
. . . ـ . . .	. . . .
. . . .	. . . .

Green. Stamp: 35 mm. Piece: 56 mm.

5. *Qisṭ.*

Vessel stamp:

امر ا	Ordered U-
سامة بن ز	sāmah bin Za-
يد بقسط	yd: one *qisṭ*,
واف *	full measure.

Green. 34 mm. Nies No. XVIII.
PLATE XII

6. *One-quarter qisṭ of olive oil.*

Vessel stamp attached to fragment of rim:

امر اسا	Ordered Usā-
مة بن زيد بر	mah bin Zayd: one-quar-
بع قسط	ter *qisṭ*
الزيت	of olive oil.

Pale blue-green. 34 mm.
PLATE XII

7. *One-quarter qisṭ of ointment.*

Vessel stamp, legend about ¾ preserved:

امر اسـ[ا]	Ordered Usā-
مة بن زيـ[د]	mah bin Zay[d]:
ربع قسـ[ط]	one-quarter *qis*[*ṭ*]
الط[لا]	of oint[ment].

A fragment of the final ا is preserved.

Pale blue-green. 29 mm.
PLATE XII

8. *Measure of . . . .*

Vessel stamp, legend about ¾ preserved:

امر اسامة	Ordered Usāmah
بن زيد مكي[لة]	bin Zayd: meas[ure]
. . . لم . . .	of . . . . ?

Green. 42 mm.
PLATE XII

Usāmah b. Zayd al-Tanūkhi was appointed Finance Director by the Caliph al-Walīd b. 'Abd al-Malik in 96 (714 A.D.), and was removed by the Caliph 'Umar b. 'Abd al-'Azīz in 99 (717 A.D.). According to Ṭabari's (and ibn al-Athīr's) sources he was also interim Governor (and Finance Director) in 102 (720–721 A.D.). Usāmah had the reputation of being particularly oppressive in his tax administration, and it is reported that he vigorously implemented the Caliphal instruction to "milk till the udder be dry, and let blood drop to the last drop." It is interesting to note that in 97 (715 A.D.) he built the first Nilometer (*miqyās*), an apparatus closely associated with the collection of revenues, on the Island of Rawḍah (Rōḍa) in Cairo; and also that he built the Bayt al-Māl, or Treasury, in Fusṭāṭ, near 'Amr's mosque.[3]

CORPUS: ½ *dīnār*
dirham
fals of 14 *kharrūbah*
uncertain coin weight (Mainoni)
uncertain disk-weight
qisṭ
½ *qisṭ*
¼ *qisṭ*
¼ *qisṭ* of olive oil
uncertain measures

[3] Grohmann, *Corpus* I², pp. 58, 94; Ṭabari, II, p. 1436; ibn al-Athīr, V, p. 77. Cf. Caetani, *Chronographia*, V, pp. 1180, 1195, 1225, 1286; Casanova, *Étude*, p. 10; C. H. Becker, *s.v. Cairo*, in the *Encyclopaedia of Islām*; Carl H.

C. *Ḥayyān b. Shurayḥ*

Finance Director, 99–101 A.H.: 717–720 A.D.

9. *One-half qisṭ of olive oil.*

Vessel stamp:

امر حيان	Ordered Ḥayyān
بن شريح	bin Shurayḥ:
نصف قسط	one-half *qisṭ*
[ز]يت وا	of [ol]ive oil, full
ف	measure.

Pale blue-green. 31 mm.
PLATE XII

10. *One-quarter qisṭ of olive oil (?).*

Vessel stamp:

امر حيان	Ordered Ḥayyān
بن شريح	bin Shurayḥ:
بربع قسط (؟)	one-quarter *qisṭ* (?)
زيت (؟)	of olive oil (?).

The last two lines are garbled, but the legend as given above seems to be intended.

Pale green. 27 mm.
PLATE XII

Cf. Petrie No. 92, a quarter-*qisṭ* of oil (wrongly read as "quarter qist of the Bedawin?"), with a legend substantially the same as the above but differently arranged.

The exact dates of Ḥayyān b. Shurayḥ's term of office as Finance Director are somewhat uncertain. The tradition is simply that he was '*āmil* for Miṣr (Egypt) under the Caliph 'Umar b. 'Abd al-'Azīz (10 Ṣafar, 99–20 Rajab, 101 A.H.: 717–720 A.D.). At least he was in office until the death of the Governor Ayyūb b. Shuraḥbīl on 11 Ramaḍān, 101 (26 March, 720 A.D.); and it may be that he was not relieved of his

Becker, *Beiträge zur Geschichte Ägyptens unter dem Islam*, II, Strassburg, 1903: 4. *Steuerverhältnisse im ersten Jahrhundert*, pp. 101–104; Lane-Poole, *History*, pp. 25–26.

duties until 'Ubaydullāh b. al-Ḥabḥāb came in about 104 A.H., because Ayyūb's two successors as Governor were not charged with the finance functions. However, the tradition that Usāmah b. Zayd was interim Governor *and* Finance Director in 102 A.H.[4] weakens the argument.[5]

CORPUS: *dīnār*
raṭl of meat
¼ *qisṭ*
½ *qisṭ* of olive oil
¼ *qisṭ* of olive oil

D. *'Ubaydullāh b. al-Ḥabḥāb*

Finance Director, 102–116 A.H.: 720–734 A.D.

11. *One-third dīnār.*

مما امر	Of what ordered
به عبيدا	'Ubaydu-
لله ابن الحبحا	llāh ibn al-Ḥabḥā-
ب مثقال ثلث	b: weight of one-third,
واف	full weight.

Pale green. 20 mm. 1.43 grm.
PLATE I

Cf. *BM* No. 3G (1.42 grm.), also one-third *dīnār*, but with a different inscription.

12. *Fals of 20 qīrāṭ.*

بسم الله	In the name of Allāh:
امر عبيد الله	ordered 'Ubaydullāh
ابن الحبحاب	ibn al-Ḥabḥāb:
مثقال فلس	weight of fals
عشرين قير	of twenty *qīra-*
ط	*ṭ*.

Pale green. 30 mm. 3.97 grm.
PLATE I

4 See above, p. 73.

5 Grohmann, *Corpus* I², p. 94; Balādhuri, p. 217.

13. *Fals of 17 qīrāṭ.*

بسم الله	In the name of Allāh:
امر عبيد الله	ordered ʻUbaydullāh
بن الحبحاب	bin al-Ḥabḥāb:
بمثقال نصف	weight of one-half
فلس سبعة	*fals* of seven-
عشر قيرط	teen *qīraṭ*,
واف	full weight.

Pale green. 27 mm. 3.22 grm.
Plate I

14. *Fals of 15 qīrāṭ.*

بسم الله	In the name of Allāh:
امر عبيد الله	ordered ʻUbaydullāh
بن الحبحاب مثقا	bin al-Ḥabḥāb: weigh-
ل نصف فلس	t of one-half *fals*
خمسة عشر	of fifteen
قيراط وا	*qīrāṭ*, full-
ف (؟)	weight.

Pale green. 24.5 mm. 2.90 grm.
Plate I

15–16. *Fals of 12 kharrūbah.*

بسم الله	In the name of Allāh:
امر عبيد الله	ordered ʻUbaydullāh
بن الحبحاب مثقال	bin al-Ḥabḥāb: weight
سطر اثنى عشر	of series(?) of twel-
ة خروبة و	ve *kharrūbah* wei-
زن (؟)	ght (?).

Pale green. Two specimens: 22 mm., 23 mm. 2.31 grm., 2.32 grm.
Plate I

17. *Two raṭls of meat.*

Fractured ring-weight bearing stamp, about four-fifths preserved, on top surface:

ممااامر	Of what ordered
به عبيدا	ʻUbaydu-

[لاّ]ه ابن الحبحا	[llā]h ibn al-Ḥabḥā-
[ب] رطلين لحم و	[b]: two *raṭls* of meat, full
اف	weight.

Green. Stamp: 31 mm. Piece, length: 69 mm., width: 49 mm., height: 41 mm. 173 grm.
PLATE VII

18. *One-half qisṭ.*

Vessel stamp:

مما امر به	Of what ordered
عبيد الله ا	'Ubaydullāh i-
بن الحبحاب	bn al-Ḥabḥāb:
نصف قس[ط]	one half *qis*[*ṭ*],
[و]اف	[full] measure.

Green. 36 mm.

Similar to *Fouquet Coll.*, p. 368, Nos. 104–105.

19. *One-quarter qisṭ. Year 111 A.H.: 729/30 A.D.*

Vessel stamp:

بسم الله	In the name of Allāh:
امر عبيد الله	Ordered 'Ubaydullāh
بن الحبحاب ربع	bin al-Ḥabḥāb: one-quarter
قسط على يدى خر (؟)	*qisṭ*; at the hands of Khurra-
ة (؟) بن ميسرة سن[ة]	h (?) bin Maysarah, year
[ا]حدى عشرة	[o]ne and ten,
مئة	one hundred.

Pale green. 43 mm.
PLATE XII

Similar to *BM* p. 108, No. 392.

The reading of the first name of the prefect is by no means certain. Lane-Poole transcribed HLM, but did not attempt to transliterate or identify this name.

20. *One-quarter qisṭ.*

Vessel stamp:

مما امر	Of what ordered
به عبيد الله	'Ubaydullāh

بن الحبحاب ربع	bin al-Ḥabḥāb; one-quarter
[ق]سط وا	*qisṭ*, full
ف	measure.

Pale green. 32 mm.

Similar to Petrie No. 105; apparently similar to *Fouquet Coll.*, p. 368, Nos. 106–107.

21. *One-quarter qisṭ of olive oil.*

Vessel stamp:

بسم الله	In the name of Allāh:
امر عبيدا	Ordered 'Ubaydu-
[ا]لله بن الحبحا[ب]	llāh bin al-Ḥabḥā[b]:
[ر]بع قس[ط]	one-quar[ter] *qis*[*ṭ*]
[ز]يت [و]	[of o]live oil, [full]
اف	measure.

Green. 37 mm.

Apparently similar to Petrie No. 108, and to *Fouquet Coll.*, p. 368, Nos. 109–119.

22. *Measure of polished lupins.*

Vessel stamp:

بسم الله	In the name of Allāh:
امر عبيد الله	ordered 'Ubaydullāh
بن الحبحاب	bin al-Ḥabḥāb:
بمكيلة الترا	measure of lup-
مس تملس	in, polished,
وافية	full measure.

Green. 43 mm. Nies, No. XVII.
PLATE XII

The word following الترمس, "lupin," is rather puzzling. One might expect مملّس, *mumallas*,[6] "polished, smoothed," but the first letter cannot possibly be م. It must be ت, ن, or ى, or the like. Lane (I[7], p. 2735) has a form تملّس, equivalent to إمّلس,

[6] Suggested by my friend, Professor Philip K. Hitti of Princeton University.

meaning *it was*, or *became*, *made*, or *rendered*, *smooth* etc. Dr. Nies, in his original publication of the piece, transcribed the word "tumlas," and suggested "smooth," *i.e.*, heaping and then smoothed over with the hands to give full measure; but I believe that "polished," that is "husked," is probably the intended meaning.

23. *Measure of shelled lentils.*

Vessel stamp, about five-sixths preserved:

[بسم الله ؟]	[In the name of Allāh ?]:
امر عبيد الله	ordered 'Ubaydullāh
بن الحبحاب	bin al-Ḥabḥāb
بطبعه مكيلة	the stamping of it: measure
عدس مقشر و	of lentils, shelled, full
فية	measure.

Pale blue-green. 37 mm.
PLATE XII

Just as the terminal date of Ḥayyān b. Shurayḥ's period of office is difficult to determine, so also is the date of the commencement of 'Ubaydullāh b. al-Ḥabḥāb's term as Finance Director uncertain. Grohmann has argued the case at considerable length and accepts the dates 102–116 (720–734 A.D.). According to one tradition, 'Ubaydullāh was in the latter year appointed Governor of Africa; but according to another (Abū al-Maḥāsin ibn-Taghri-Birdi), the date of his appointment as Governor of Africa was 114. Al-Bakri by implication confirms this earlier date in recording that 'Ubaydullāh built a mosque and arsenal in Tunis in 114.[7] As an

[7] After the manuscript of the present catalogue had been given to the printer, Mr. Fahim Kouchakji of New York was good enough to place in my hands a glass weight which he had recently received from Eygpt. I found it to be a fine, and so far as I know, unique *dīnār* weight of 'Ubaydullāh b. al-Ḥabḥāb, dated 115 A.H. This piece is of first-rate importance in establishing 'Ubaydullāh's continuance as Finance Director beyond the year 114 at least until 115 A.H. The inscription on the weight reads: بسم الله | مما امر به عبيد | الله

oppressive tax-collector he had an unsavory reputation, and his iconoclastic measures against the Copts contributed to a revolt of that "minority." His son, al-Qāsim (see below, p. 83), succeeded him in the Egyptian Treasury. 'Ubaydullāh's stamps and weights are numerous.[8]

CORPUS: ⅓ *dīnār*
fals
fals of 20, 18, 17, 15, 13 and 12 *qīrāṭ* and *kharrūbah*
2 *raṭls* of meat
1 *raṭl* of "dates" (probably meat) (Petrie)
qisṭ
½ *qisṭ*
¼ *qisṭ*
qisṭ of olive oil
¼ *qisṭ* of olive oil
measure of lupins
measure of lentils

Khurrah (?) b. Maysarah (No. 19) is unknown to me. The problematical reading of the name, especially the first part of it, makes an exhaustive search among the chroniclers unprofitable. It is to be hoped that more specimens bearing this prefect's name may appear; identification might then be possible.

بن الحبحاب | مثقال دينر وا | ف سنة خمس | عشرة و | مائة "In the name of Allāh: | of what ordered 'Ubaydu- | llāh bin al-Ḥabḥāb: | weight of *dīnār*, full | weight; year fif- | teen and | one hundred." Pale green, 30 mm., 4.19 grm. The piece has subsequently been acquired by the Museum of the American Numismatic Society. It has been given the number 10a (PLATE I).

[8] Grohmann, *Corpus* I², pp. 94–95; cf. Grohmann, *Egyptian Library*, III, pp. 117–122, 137–138; Lane-Poole, *History*, p. 27; Casanova, *Étude*, p. 11. The use of the title *amīr* in a papyrus of 'Ubaydullāh b. al-Ḥabḥāb perhaps indicates that for a time at least he was Deputy Governor as well as Finance Director (cf. Grohmann, *Egyptian Library*, III, pp. 122, 137, Nos. 175, 180).

E. *Name of Official Effaced*

24. *Raṭl* (?). *Year 114 A.H.: 732/3 A.D.*

Disk-weight. About one-half of a circular or ovoid plano-convex disk, bearing three stamps on the convex side:

(*a*) about one-half preserved:

. . . .	. . . .
ـــ	. . . .
. . . . . رطل (؟)	raṭl (?) . . . . .
. . . . . ارو	. . . .
[و]اف	[full] weight.

(*b*) almost completely preserved:

سنة ا	Year f-
ربع	our-
عشر	teen
وما ئ[ة]	and one hund[red].

(*c*) almost entirely lacking and no part of legend preserved.

Green. Stamp (*a*): 31 mm. (*b*): 22 mm. (*c*): 16 mm.
Piece, maximum di.: 113 mm., thickness: 19 mm.

F. *Ḥafṣ b. al-Walīd*

Governor, 108 A.H. (part): 727 A.D.
Governor, 124–127 A.H.: 742–744 A.D.
Finance Director, 124–125 A.H.: 742–743 A.D.
Governor, 127–128 A.H.: 745–746 A.D.

25. *Raṭl and one-quarter wuqīyah* (?).

Disk-weight. Fragment of ovoid (?) plano-convex disk, bearing two contiguous stamps on the convex side:

(*a*)	بسم [الله]	In the name [of Allāh]:
	امر ا[لامير ؟]	ordered [the Amīr ?]
	حفص بن [الوليد ؟]	Ḥafṣ bin [al-Walīd ?]
	بطبعه م[ثقال ر ؟]	the stamping of it, [weight (?) of ra-]
	طل واف ر	ṭl, full weight. . . . .

ربع و[قية ؟]	one-quarter [*wuqīyah* ?]
و[اف ؟]	[full weight ?].
(*b*) على يدى	At the hands
يزيد بن ا	of Yazīd bin a-
بى يزيد *	bī Yazīd.

Green. Stamp (*a*): *ca.* 42 mm. (*b*): 22 mm. Piece, length: 74 mm., width: 49 mm., thickness: 9 mm. 45.0 grm.
PLATE V

It is unfortunate that the larger stamp on this piece, with its interesting and unusual legend, is not more perfectly preserved. To judge by what remains it would appear that the weight is that of a *raṭl* (or fraction) plus a quarter ounce. For the existence of such weights as the equivalents of various types of *qisṭs* there is abundant evidence in the material collected by Sauvaire, for example a *qisṭ* of honey weighing 1½ (or 2½ ?) *raṭls*, a *qisṭ* of 7½ *raṭls*, etc.[9]

26. *Qisṭ*.

Vessel stamp attached to fragment of rim:

بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr
حفص بن الوليد	Ḥafṣ bin al-Walīd
بطبعه قسط	the stamping of it: *qisṭ*,
واف	full measure.

Light, opaque green on dark-green vessel. 41 mm. Nies, No. XVI.
PLATE XII

Ḥafṣ b. al-Walīd, having acted as Governor of Egypt for two weeks late in 108 (March–April, 727 A.D.), was appointed to that office, including the Finance Directorate, on 7 Rabīʿ II, 124 (18 Feb., 742 A.D.). He was relieved of the Finances on 23 Shawwāl, 125 (19 Aug., 743 A.D.), and of the Governorship in 127 (744/5 A.D.). Again in the same year he was reappointed Governor, was finally removed on 1 Muḥarram,

[9] Sauvaire, *Matériaux*, III, pp. 443–444.

128 (3 Oct., 745 A.D.), and was executed on 3 Shawwāl, 128 (28 June, 746 A.D.).[10]

CORPUS: *dīnār*
⅓ dīnār
dirham
raṭl fraction and ¼ *wuqīyah*
wuqīyah
qisṭ

For Yazīd b. abī-Yazīd (No. 25), see p. 91.

G. *Al-Qāsim b. 'Ubaydullāh*

Finance Director, 116–124 A.H.: 734–742 A.D.

27. *Dīnār*.

بسم الله	In the name of Allāh:
امر القاسم	ordered al-Qāsim
بن عبيد الله	bin 'Ubaydullāh:
مثقال دينر	weight of *dīnār*,
واف	full weight.

Metropolitan Museum, 89.2.241. Green. 28.5 mm. 4.24 grm.
PLATE I

28. *One-half dīnār. Year 119 (?) A.H.: 737 A.D.*

بسم الله ا	In the name of Allāh: com-
مر الله بالو	manded Allāh hon-
فا وامر بطبعه	esty; and ordered the stamping of it,
مثقال نصف و	weight of one-half W-
من القاسم بن	MN (for "WZN," weight), al-Qāsim bin
عبيد الله على يدى	'Ubaydullāh, at the hands of
مسلم بن الع[ر]	Muslim bin al-'A[r-]
اف سنة تع(؟)	āf, year nine (?)-
عشر مة (؟)	teen [and] one hundred (?).

Yellowish green. 24 mm. 2.12 grm.
PLATE I

[10] Grohmann, *Corpus* I², p. 101; cf. Grohmann, *Arabische Eichungsstempel*, p. 157; Wüstenfeld I, pp. 44, 46–47.

29. *One-third dīnār.*

[ا]مر ا[لله با]	Com[manded Allāh hon-]
لوفا و[امر]	esty: and [ordered]
بطبعه [مثقال]	the stamping of it, [weight]
ثلث و[زن؟][ا]	of one-third w[eight (?), a-]
لقاسم [بن عبيد]	l-Qāsim [bin 'Ubayd-]
الله ع[لى يدى مسلم]	ullāh a[t the hands of Muslim]
بن الع[راف . . . .]	bin al-'A[rāf . . . . .].

Broken, about two-fifths lacking. Pale green. 19 mm. 0.80 grm.
PLATE I

30. *Fals of 30 kharrūbah. Year 119 A.H.: 737 A.D.*

بسم الله ا	In the name of Allāh: com-
مر الله بالوفا	manded Allāh honesty:
وامر بطبعه	and ordered the stamping of it,
مثقال فلس ثلثين	weight of *fals* of thirty
خروبة القاسم	*kharrūbah*, al-Qāsim
بن عبيد الله على يدى	bin 'Ubaydullāh, at the hands
مسلم بن العا	of Muslim bin al-'Ā-
ف سنة تسع	f, year nine-
عشرة وما	teen and one hund-
ئة	red.

Green. 33 mm. 5.83 grm.
PLATE I

Similar to *BM* No. 4 (5.83 grm.); Jungfleisch (from Bibliothèque Nationale, Paris) (5.80 grm.).

31. *Fals of 15 kharrūbah.*

[ا]مر [القا]	[Or]dered [al-Qā-]
سم بن عبيد	sim bin 'Ubayd-
[ا]لله مثقال	[u]llāh: weight
خمسة عشر	of fifteen
خروبة	*kharrūbah*.

Pale green. 24.5 mm. 2.97 grm.
PLATE I

32. *Two raṭls of meat.*

Fractured ring-weight bearing two stamps on top surface:

بسم الله	(*a*)	In the name of Allāh:
امر القاسم بن		ordered al-Qāsim bin
عبيد الله بطبعه		ʿUbaydullāh the stamping of it,
رطلين لحم و		two *raṭls* of meat, full
اف		weight.
الوفا	(*b*)	Honesty
لله		to Allāh.

Green. Stamp (*a*): 33 mm. (*b*): 17 mm. Piece, length: 87 mm., width: 59 mm., height: 58 mm. 300.0 grm.

Plate VIII

33. *Great raṭl (?).*

Disk-weight. Fragment of circular (?) plano-convex disk, bearing stamp about four-fifths preserved on the convex side:

بسم اللّ[ه]	In the name of Allā[h]:
امر القاسـ[م]	ordered al-Qāsi[m]
بن عبيد ال[لّه]	bin ʿUbaydul[lāh]
بطبعه ر[طل ؟]	the stamping of it, *ra*[*ṭl* ?]
كبـ[ـير]	gr[eat],
واف	full weight.

Green. Stamp: *ca.* 38 mm. Piece, max. di.: 55 mm., thickness: 19 mm.

Plate V

34. *Raṭl of meat. Year 123 (?) A.H.: 740/1 A.D.*

Fractured ring-weight bearing stamp on top surface:

[بسـ]م الله	[In the na]me of Allāh:
امر الله بالو	commanded Allāh hon-
[فـ]ا وامر بصنعـ[ـه]	[es]ty; and ordered [its] making,
[ر]طل اللحم القا	[*ra*]*ṭl* of meat, al-Qā-
[سـ]م بن عبيد ال[لّه]	[si]m bin ʿUbaydul[lāh],
[علـ]ى يدى داود(؟) . . .	[a]t the hands of (Dāʾūd ?) [bin ?]
. . . فر(؟) سنة ثلث(؟)	[Jaʿ]far (?), year three (?)

وعشرين	and twenty
ومئة	and one hundred.

Green. Stamp: 37 mm. Piece, length: 61 mm., width: 44 mm., height: 30 mm. 85.50 grm.

PLATE VIII

35. *Raṭl of* . . . .

Fractured ring-weight bearing two stamps on top surface:

بسم [الله]	(*a*) In the name of [Allāh]:
امر القاسـ[م]	ordered al-Qāsi[m]
بن عبيد الله	bin 'Ubaydullāh
بعبعه (*sic*) رطل	the stamping of it (misspelled), *raṭl*
. . . .	. . . .
الوفا	(*b*) Honesty
لله	to Allāh

Green. Stamp (*a*): 29 mm. (*b*): 21 mm. Piece, length: 63 mm., width: 42 mm., height: 47 mm. 143.50 grm.

36. *One-quarter* . . . . *Year 122 A.H.: 739/40 A.D.*

Vessel stamp:

بسم الله	In the name of Allāh:
امر الله با	Allāh commanded hon-
لوفا وامر	esty; and ordered
بطبعه ربع	the stamping of it, one-quarter,
القاسم بن عبيد	[a]l-Qāsim bin 'Ubayd-
الله على يدى ظ[فـ؟]	ullāh, at the hands of Ẓ[afa ?]-
ر بن قتيبة (؟) سنة ا	r bin Qutaybah (?), year t-
ثنين وعشرين	wo and twenty,
مائة	one hundred.

Green. 40 mm.

PLATE XIII

One would expect some term denoting the measure following the word "one-quarter"; probably the measure was inadvertently omitted by the artisan.

Cf. Petrie No. 120, a half-*qisṭ* stamp with a very similar inscription and the same date. Petrie read Ṭahīr b. Nasiq, but the illustration shows that neither of these names can be correct. I am not at all confident of the reading suggested above, but Ẓafar is certainly a possible reading of the first name on the specimen described by Petrie. The second letter of the first name is not preserved on the present piece.

37. *Measure of shelled pease.*

Vessel stamp attached to fragment of rim:

بسم الله	In the name of Allāh:
امر القاسم بن	ordered al-Qāsim bin
عبيد الله	'Ubaydullāh
بطبعه مكيلة	the stamping of it, measure
جلبان مقشر	of pease, shelled,[11]
واف	full measure.

Green. 39 mm.
PLATE XIII

This specimen perfectly illustrates the position of a stamp on the vessel.

38. *Measure of black lentils (?).*

Vessel stamp attached to a fragment of rim:

بسم الله	In the name of Allāh:
امر الله بالو	commanded Allāh hon-
فا وامر بطبعه	esty; and ordered the stamping of it,
[م]كيلة الانز(؟) الا-[ود]	measure of lentils (?), bla[ck],
[ال]قاسم بن عبيد اا	al-Qāsim bin 'Ubaydul-
له على يدى داو[د]	lāh, at the hands of Dā'ū[d]
. . . .	. . . .

Green. 41 mm.
PLATE XIII

[11] In an Arabic papyrus containing a list of tradesmen and craftsmen there occurs the entry *muqashshirīn*, "peelers, shellers" (Grohmann, *Egyptian Library*, III, p. 228).

Al-Qāsim b. 'Ubaydullāh, son of 'Ubaydullāh b. al-Ḥabḥāb, was Finance Director from 116 (734 A.D.) until 13 Sha'bān, 124 (22 June, 742 A.D.). It is possible that his term may have begun before 116, but certainly not before 115 (see p. 79, above).[12] The date 112 A.H., sometimes given as the beginning of al-Qāsim's administration (*e.g.*, *BM*), is undoubtedly incorrect and has its origin in Bishop Severus of Ashmunain's chronicle. The weights and stamps of al-Qāsim, like his father's, are numerous.

CORPUS: *dīnār*
- ½ *dīnār*
- ⅓ *dīnār*
- *dirham*
- great *fals* of 30 *kharrūbah*
- *fals*
- *fals* of 30, 22 and 15 *kharrūbah*
- *wuqīyah*
- great *raṭl*
- *raṭl*
- 2 *raṭls* of meat
- *raṭl* of meat
- *raṭl* of . . . . .
- *qisṭ*
- ½ *qisṭ*
- ¼ *qisṭ*
- ¼ *qisṭ* of oil
- measure of pease
- measure of lentils
- ¼ measure
- uncertain measures
- Æ coins, no date or mint (Paris No. 1660; Berlin No. 2249; Karabacek in *Wiener Numismatische Monatshefte*, 1867, pp. 35–36, and 1868, pp. 20–21).

Muslim (or Musallam) b. al-'Arāf (Nos. 28–30) is unknown except on the weights and stamps; by their evidence he was Prefect in the year 119 (737 A.D.). Lane-Poole, in the BM catalogue, read the name Muslim b. al-'Afī; and so did I until I saw Jungfleisch's *Les Ratls discoïdes en Verre*, where he writes that the name on the BM specimen and on one in the Bibliothèque Nationale is "défiguré par un sectionnement résultant de la mise à la ligne au milieu du mot." I am not yet

[12] Grohmann, *Corpus* I², pp. 98–99. Cf. Grohmann, *Egyptian Library*, I, pp. 47–48.

convinced that al-ʻArāf is correct, although Jungfleisch states that his specimen bearing the name, a *qisṭ* vessel stamp, is entirely clear, the father's name being complete on one line. Certainly on the splendid specimen in the present collection, No. 30, it is difficult to read anything but العاف, and one can only assume an engraver's error to establish the reading العراف.

Dā'ūd, or Dā'ūd bin Jaʻfar (?) (Nos. 34 and 38) cannot be identified until pieces with his name in a better state of preservation are found. A prefect named Dā'ūd appears in conjunction with an official by the name of ʻAbdullāh b. ʻAli on a *dirham* weight in the Fouquet Collection (p. 381, No. 48), but ʻAbdullāh b. ʻAli is not identified.

Ẓafar b. Qutaybah, if indeed that be the name on No. 36, likewise is unidentified. See p. 87, above.

H. *ʻĪsā b. abī-ʻAṭā*

Finance Director, 125–127 A.H.: 743–745 A.D.
128–131 A.H.: 745–749 A.D.

39. *Dīnār.*

[بسم ا]لله ا	[In the name of A]llāh: com-
[مر الله] بالوفا	[manded Allāh] honesty;
[ا مر ع]يسى بن ابى	[ordered ʻĪ]sā bin abī-
[عطا] بطبعه	[ʻAṭā] the stamping of it,
[مثـ]قال دينر على	[wei]ght of *dīnār*, at
[يد]ى يزيد بن(؟)	[the hand]s of Yazīd bin (?)
[ابى يزيد ؟]	[abī-Yazīd ?].

Broken, about two-fifths lacking. Pale green. 29 mm. 2.55 grm.

Cf. Petrie No. 134, apparently similar.

40. *One-half dīnār.*

The legend is abbreviated and garbled, but is probably intended to read:

بسم الله	In the name of Allāh:
اعيسى بن بى	ordered ʻĪsā bin [a]bī-[ʻAṭā]

بصنعه مثقا	the making of it, wei-
ل نصف على	ght of one-half, at
يدى (؟) يزيد بن ا	the hands of Yazīd bin a-
بى (؟) يزيد	bī Yazīd.

Yellowish green. 22 mm. 2.10 grm.
PLATE I

This piece is similar to the *Fouquet Coll.*, p. 379, No. 24, but is better preserved. Casanova's reading of "Yazīd b. Tamīm" is invalidated by this clearer specimen.

41. *Two (?) raṭls of meat.*

Fractured ring-weight bearing stamp, about two-thirds preserved, on top surface:

[امر اللّ]ه بالو	[Commanded Allā]h hon-
[فاا]مر عيسى	[esty: or]dered 'Īsā
[بن ابى ع]طا بطبع[ه]	[bin abī 'A]ṭā the stamping of [it],
[رط]لين (؟) للحم (*sic*)	two (?) [*raṭ*]*ls* of meat,
[و]اف	[full] measure.

Green. Stamp: 40 mm. Piece, length: 42 mm., width: 37 mm., height: 33 mm. 60.0 grm.

Cf. *Fouquet Coll.*, p. 392, No. 55, with a quite similar inscription, but beginning: . . . بسم الله امر الامير عيسى.

42. *One-quarter qisṭ.*

Vessel stamp:

[بسـ]م الله	[In the na]me of Allāh:
[امرا]لا م[ير]	[ordered t]he Am[īr]
[عيسـ]ى بن ابى عط[ا]	['Īs]ā bin abī-'Aṭ[ā]
[بطبع]ه ربع قسـ[ط]	[the stamping] of it, one quarter *qis*[*ṭ*],
و[اف]	full [measure].

Metropolitan Museum, 08.256.7. Green. 30 mm.
PLATE XIII

The stamp was faultily impressed, resulting in an off-center impression and damaged inscriptions.

Cf. *Fouquet Coll.*, p. 369, Nos. 134–135; cf. also Petrie No. 135, also a quarter-*qisṭ*, but with different inscriptions.

'Īsā b. abī-'Aṭā was twice Finance Director, the first time from 23 Shawwāl, 125, until 28 or 29 Jumādā II, 127 (19 Aug., 743–6 or 7 April, 745 A.D.), and again from 12 Muḥarram, 128, until 10 Rajab, 131 (14 Oct., 745–5 Mar., 749 A.D.).[13]

CORPUS: *dīnār*
½ dīnār
dirham
2 *raṭls* of meat
½ *raṭl*[14]
½ *qisṭ*
¼ *qisṭ*
uncertain measures
½ measure

For Yazīd b. abī-Yazīd (Nos. 39–40), see below.

I. *Yazīd b. abī-Yazīd*

Prefect, *ca.* 116–127 A.H.: 734–745 A.D.
Finance Director (?), *ca.* 127 A.H.: 745 A.D.

43. *Fals of 20 qīrāṭ.*

امر يزيد	Ordered Yazīd
بن ابى يزيد	bin abī-Yazīd:
مثقال فلس	weight of *fals*

[13] Grohmann, *Corpus* I², pp. 103–104; cf. Wüstenfeld I, p. 46. A papyrus letter of 'Īsā's dated Rabī' II, 127, is preserved in Margoliouth, *Arabic Papyri*, p. 29.

[14] Two ½ *raṭls* assigned to "El Mughyra" or "Mugheyra," *i.e.*, Mughayrah b. 'Ubaydullāh, by Petrie. This attribution is surely mistaken, since neither the first nor the last part of the name can be read in what is preserved. I believe the name is 'Īsā b. abī-'Aṭā.

عشرين قير	of twenty *qīra-*
ط	*ṭ.*

Pale green. 29 mm. 3.86 grm. Nies, No. X.

Similar to *BM* No. 7 (3.62 grm.).

44. *Fals of 20 qīrāṭ.*
Similar to No. 43, but * above, and the *ṭā* on the last line is retrograde.

Pale green. 30 mm. 3.95 grm.

45–46. *Fals of 20 kharrūbah.*

بسم الله ا	In the name of Allāh: or-
مر يزيد بن ا[بى]	dered Yazīd bin a[bī-]
يزيد وزن	Yazīd: weight
فلس عشر	of *fals* of twen-
ين خروبة	ty *kharrūbah.*

Two specimens. Pale green; brownish green.
24 mm.; 24 mm. 3.97 grm.; 3.61 grm. (worn).
Plate I

47. *Measure not specified.*
Vessel stamp:

على يدى	At the hands
يزيد بن	of Yazīd bin
ابى يزيد	abī-Yazīd.

Green. 29 mm.
Plate XIII

48. *Measure not specified.*
Vessel stamp:

على يدى	At the hands
يزيد بن ا	of Yazīd bin a-
بى يزيد *	bī-Yazīd.

Green. 28 mm.

Similar to Petrie No. 132; cf. *Fouquet Coll.*, p. 373, Nos. 175–182, not illustrated and the division of words

not indicated in the transcription; also the star is not mentioned.

Yazīd b. abī-Yazīd is, so far as I know, unrecorded in the chronicles. I have not made an exhaustive search, but his name does not appear in the best-known histories. The weights and stamps, however, do provide us with some facts bearing on his career. He served as Prefect (على يدى) under al-Qāsim b. ʿUbaydullāh, at least in the year 122 A.H. (stamps in the Fouquet, University College and Vienna Collections), under Ḥafṣ b. al-Walīd, and under ʿĪsā b. abī-ʿAṭā.[15] On a number of pieces, including Nos. 43–46 above, he appears as the only official, without, however, the title Amīr. From the collation of the several dates involved, it is clear that Yazīd b. abī-Yazīd served as Prefect from some date in or after 116[16] until 28 or 29 Jumādā II, 127 (734–6 or 7 April, 745 A.D.); and it can be argued that during the interim between ʿĪsā b. abī-ʿAṭā's two terms as Finance Director, he served in that latter capacity *pro tem., i.e.*, 29 Jumādā II, 127–12 Muḥarram, 128 (7 Apr.–14 Oct., 745 A.D.), during which period he issued official weights but did not have the privilege of entitling himself "Amīr." It will be seen below (p. 96) that I have assigned the Prefect Yazīd b. Tamīm to ʿĪsā b. abī-ʿAṭā's second term as Finance Director from 128–131 (745–749 A.D.).

CORPUS: ½ *dīnār*
⅓ *dīnār*
dirham
fals of 20 *qīrāṭ*
fals of 20 *kharrūbah*

[15] I cannot accept the reading of his name on a *raṭl* of ʿĪsā b. Luqmān, Governor in 161–162 A.H. (Petrie No. 194).

[16] There were other Prefects under al-Qāsim b. ʿUbaydullāh, for example Muslim b. al-ʿArāf (?) and Dā'ūd, who probably preceded him in office. At all events, as noted above, he was in office by the year 122 A.H.

2 *raṭls* of meat
raṭl
¼ *raṭl*
qisṭ
¼ *qisṭ*
uncertain measures

J. ‘*Abd al-Malik b. Marwān*

Finance Director, 131–132 A.H.: 749 A.D.
Governor, 132–133 A.H.: 750 A.D.

49. *Fals of 30 kharrūbah.*

بسم الله ا[مر]	In the name of Allāh: or[dered]
الامير عبد الم[لك]	the Amīr ‘Abd al-Ma[lik]
بن مرون اصلحه [الله]	bin Marwan, may [Allāh] mend him,
بطبعه مثقال ف[لس]	the stamping of it, weight of *fa*[*ls*]
ثلثين خروب[ة واف]	of thirty *kharrūba*[*h*, full weight],
على [يدى يزيد بن]	at [the hands of Yazīd bin]
[تميم]	[Tamīm].

Broken, about one-third lacking. Pale blue-green. 32 mm. 3.51 grm.

Similar to *Fouquet Coll.*, p. 379, Nos. 27–28 (5.88 grm.), and to Petrie No. 140 (5.88 grm.).

50. *Raṭl.*

Fractured ring-weight bearing two stamps, one of which fractured and largely effaced, on top surface:

بسم الله	(*a*) In the name of Allāh:
امر الله بالوفا	commanded Allāh honesty;
وامر الامير عبد	and ordered the Amīr ‘Abd
الملك بن مرون	al-Malik bin Marwan
بطبعه رطل و	the stamping of it, *raṭl*, full
اف	weight.

[على يـ]ـدى	(*b*) [At the han]ds
. . . . . بن(؟)	[of . . . . .] bin (?)
. . . . . .	. . . .

Green. Stamp (*a*): 33 mm. (*b*): 23 mm. Piece, length: 63 mm., width: 43 mm., height: 32 mm. 112.50 grm.
PLATE VIII

51. *One-half qisṭ.*

Vessel stamp:

بسم الله [امر ؟]	In the name of Allāh: [ordered ?]
عبد الملك بن [مر]	ʻAbd al-Malik bin [Mar-]
[وان] بطبعه نصف	[wān?] the stamping of it, one-half
قسط واف على [يدى]	*qisṭ*, full weight, at [the hands]
محمد بن شر	of Muḥammad bin Shura-
حبيل	ḥbīl.

Metropolitan Museum, 08.256.3. Green. 44.5 mm.
PLATE XIII

Cf. *BM*, p. 107, No. 391, a half-*qisṭ* stamp of ʻAbd al-Malik b. Marwān, and *Fouquet Coll.*, p. 374, No. 183, another half-*qisṭ* stamp of Muḥammad b. Shuraḥbīl.

ʻAbd al-Malik b. Marwān b. Mūsā b. Nuṣayr al-Lakhmi was Finance Director under al-Mughayrah b. ʻUbaydullāh, who was Governor from 24 Rajab, 131–12 Jumādā I, 132 (19 March–27 Dec., 749 A.D.); he then had the distinction of being the last Umayyad Governor, surrendering his post to the ʻAbbāsid Ṣāliḥ b. ʻAli when the latter entered Fusṭāṭ on 8 Muḥarram, 133 (16 Aug., 750 A.D.).[17]

CORPUS: *dīnār*
- ½ *dīnār*
- *fals* of 30 *kharrūbah*
- *raṭl*
- ½ *qisṭ*

[17] Grohmann, *Corpus* I², p. 107; Wüstenfeld I, pp. 48–49; cf. Zambaur, *Manuel*, p. 26, with minor differences in the exact dates.

¼ *qisṭ*
uncertain measures
Æ coins; Fusṭāṭ, no date (Tiesenhausen No. 655; Berlin p. 376, No. 2028a,b; Khedivial No. 943; Paris Nos. 1494–5); Fayyūm (Paris No. 1496); and Iskandarīyah (?), no date (Khedivial No. 845).

I have no information regarding the Prefect Yazīd b. Tamīm (No. 49) other than that provided by the weights and stamps. That he was in office during the Governorship of ʻAbd al-Malik b. Marwān is evident from the present and other coin weights. Also there are weights in the Fouquet and University College Collections with Yazīd b. Tamīm's name as Prefect under ʻĪsā b. abī-ʻAṭā, Finance Director in 125–127 and 128–131. As Yazīd b. abī-Yazīd (see above, p. 93) was also a Prefect under the latter Finance Director, as well as under Qāsim b. ʻUbaydullāh and under Ḥafṣ b. al-Walīd before him, it may be concluded that Yazīd b. Tamīm was the later of the two Prefects to serve under ʻĪsā b. abī-ʻAṭā, and that he was continued in that office by ʻAbd al-Malik b. Marwān when the latter became Finance Director in 131. We may then assume Yazīd b. Tamīm's dates to be approximately 128–132 (745–749 A.D.), *i.e.*, during ʻĪsā b. abī-Aṭā's second term as Finance Director and ʻAbd al-Malik b. Marwān's service in the same office.

For Muḥammad b. Shuraḥbīl, see below.

K. *Muḥammad b. Shuraḥbīl*

Prefect, *ca.* 132–152 A.H.: 749–769 A.D.

52. *Raṭl.*

Fractured ring-weight bearing stamp, about three-quarters preserved on top surface:

بسم [الله]	In the name of Allāh:
على يدى محمـ[ـد]	at the hands of Muḥamma[d]

[بن شرحب[يل] bin Shurahb[il];
رطل واف *raṭl*, full weight.

Dark green. Stamp: 36 mm. Piece, length: 75 mm., width: 48 mm., height: 33 mm. 83.50 grm.
PLATE VIII

Muḥammad b. Shuraḥbīl, a Prefect unknown to me in the chronicles, is placed here because his first appearance is under 'Abd al-Malik b. Marwān (No. 51 above). He was active over a period of twenty years. He must have followed Yazīd b. Tamīm (see above), probably upon 'Abd al-Malik b. Marwān's succession to the Governorship sometime after 12 Jumādā I, 132 (27 Dec., 749 A.D.). He then served successively under 'Abd al-Malik b. Yazīd (No. 67 and University College Collection), Mūsā b. Ka'b (No. 69 and Fouquet Collection), and Yazīd b. Ḥātim (University College Collection). His inclusive dates must therefore be *ca.* 12 Jumādā I, 132, to Rabī' II, 152 (27 Dec., 749–May, 769 A.D.).

CORPUS: *dīnār*
½ dīnār
raṭl
wuqīyah
qisṭ
½ qisṭ
¼ qisṭ

L. *The Caliph al-Manṣūr*[18]
136–158 A.H.: 754–775 A.D.

53. *One-half raṭl.*

Disk-weight. About one-half of circular plano-convex disk, bearing stamp about two-thirds preserved:

م[ما امر به] Of [what ordered]

[18] The arrangement of the pieces under al-Manṣūr is: first, the weights and stamps bearing his name alone; then, the coin weights issued in his name by 'Abd al-Malik b. Yazīd.

عبد [الله عبد]	the servant [of Allāh, 'Abd-]
الله امير [المؤمنين]	ullāh, Commander [of the Believers]:
أوفوا الكيل و]	"Give just meas[ure and]
لاتكنوا (*sic*) من [الا]	be not among [the]
مخسرين نصف	defrauders"; one-half
رطل و	*raṭl*, full
اف	weight.

Green. Stamp: 35 mm. Piece, di.: 63 mm., thickness: 19.5 mm. 88.00 grm.
PLATE V

The quotation is from the Qur'ān, Chap. XXVI, verse 181.

54. *One-quarter raṭl.*

Disk-weight. About one-half of roughly circular plano-convex disk, bearing stamp about three-fifths preserved:

[مما امر به ؟]	[Of what ordered ?]
[عبد الله عبد ؟]	[the servant of Allāh, 'Abd- ?]
الله امير المؤمنين	ullāh, Commander of the Believers:
أوفوا الكيل ولا	"Give just measure and not
تكونوا من المخسر	be among the defrauder-
ين ربع رطل	s"; one-quarter *raṭl*,
واف	full weight.

Green. Stamp: 37 mm. Piece, max. di.: 75 mm., thickness: 14.5 mm. 68.00 grm.
PLATE VI

Cf. No. 53 for the Qur'ānic quotation.

55. *One-half qisṭ.*

Vessel stamp:

مما امر به	Of what ordered
عبد الله عبد	the servant of Allāh, 'Abdu-
[ا]لله امير المؤمنين	llāh, Commander of the Believers:
أوفو الكيل ولا ت	"Give just measure and not b-

كونوا من المخسر[ين]	e among the defraud[ers]";
نصف قسط	one-half *qisṭ*,
واف	full measure.

Metropolitan Museum, 08.256.4. Green. 38 mm.
PLATE XIII

Cf. No. 53 for the Qur'ānic quotation.

56. *One-half raṭl of oil.*

Vessel stamp attached to fragment of rim:

امر عبد ا	Ordered the servant of A-
[ا]لله عبد الله ا	[l]lāh, ʿAbdullāh, Com-
مير المنوم	mander [of the Believers],
[بـ]طبعه نصف	the stamping of it, one-half
[ر]طل دهن	*raṭl* of oil,
واف	full measure.

Green. 35 mm.
PLATE XIII

57. *One-third (?) qisṭ.*

Vessel stamp attached to fragment of rim:

مما امر [به]	Of what ordered
عبد الله عبد	the servant of Allāh, ʿAbdu-
[ال]له امير المؤمن[ين]	[l]lāh, Commander of the Believ-[ers]:
أوفوا الكيل ولا تك[و]	["Gi]ve just measure and not b-
[نوا] من المخسرين ؛[لث ؟]	[e] among the defrauders"; one-thi[rd ?]
[ق]سط واف	[*qi*]*sṭ*, full measure.

Green. 40 mm.

Cf. No. 53 for the Qur'ānic quotation.
Cf. *Fouquet Coll.*, p. 371, No. 153, and p. 375, No. 5, with inscriptions incomplete.

58. *Measure of black lentils.*

Vessel stamp:

[ا]مر عبد الله	[Or]dered the servant of Allāh,

[عب]د الله امير	['Ab]dullāh, Commander
[ال]مؤمنين بطبع[ه]	[of the] Believers, the stamping [of it],
مكيلة عد[س]	measure of lenti[ls],
الاسود	black,
واف	full measure.

Green. 42 mm.
PLATE XIII

Cf. *Fouquet Coll.*, p. 371, No. 150, possibly similar, but description incomplete.

59. *Dīnār.*

Obverse:

[مما امر به ؟]	[Of what ordered ?]
عبد الله [عبد]	the servant of Allāh, ['Abd]
الله امير المؤ	ullāh, Commander of the Be-
منين مثقال د	lievers: weight of *dī-*
ينر واف	*nār*, full weight.

Reverse: center within circle

طبعه	Stamped it,
كيل	Kayl.

margin

. . . . د الملك بن ي[زيد]	['Ab]d al-Malik bin Ya[zīd].

Broken, about ¼ lacking. Opaque, deep claret. 30 mm. 3.09 grm.
PLATE I

Cf. *BM* No. 57, obverse identical, but no reverse. Cf. *Fouquet Coll.*, p. 380, No. 34, a *dirham* weight but otherwise practically identical.

60. *One-half dīnār.*

Obverse:

مما امر به	Of what ordered
عبد الله عبد الله	the servant of Allāh, 'Abdullāh,
امير المؤمنين أو	Commander of the Believers: "Gi-

فوا الكيل ولا تكو ve just measure and be not
نوا من المخسرين among the defrauders";
مثقال نصف weight of one-half,
واف full weight.

Reverse: center within circle

طبعه Stamped it,
كيل Kayl.

margin

[عبد ال]ملك بن يزيد ['Abd al]-Malik bin Yazīd.

Opaque, dark brown. 23 mm. 2.08 grm.
PLATE I

Cf. No. 53 for the Qur'ānic quotation.

Cf. *Fouquet Coll.*, p. 371, No. 153, the last two lines of the obverse effaced, and lacking the reverse; also, p. 375, No. 5, a similar legend as far as ولا تكونوا on the bottom of a bottle.

The exact dates of the 'Abbāsid Caliph al-Manṣūr's rule were 13 Dhū al-Ḥijjah, 136, to 6 Dhū al-Ḥijjah, 158 (9 June, 754–7 Oct., 775 A.D.).

CORPUS: *dīnār*
½ *dīnār*
raṭl
½ *raṭl*
¼ *raṭl*
½ *raṭl* of oil
qisṭ
½ *qisṭ*
⅓(?) *qisṭ*
measure of dates
measure of chick-peas
measure of lentils
uncertain measures

For a discussion of the pieces with no name other than that of the Caliph, see p. 123, below.

For ʻAbd al-Malik b. Yazīd and Kayl (Nos. 59–60), see pp. 103 ff.

M. *Ṣāliḥ b. ʻAli*

Governor, 133 A.H.: 750/1 A.D.
Governor and Finance Director, 136–137 A.H.: 753–755 A.D.

61. *Uncertain weight.*

Fractured ring-weight bearing stamp about three-quarters preserved on top surface:

مما ام[ر به]	Of what ordered
الا مير صلح [بن]	the Amīr Ṣaliḥ [bin]
[ع]لى (؟) اصلحه الله	[ʻA]li (?), may Allāh mend him:
[اوفو]ا الكيل ولا	["Give] just measure and not
[تكونو]ا من المخس	[be] among the defraud-
[رين] واف	[ers"]; full weight.

Green. Stamp: 42 mm. Piece, length: 64 mm., width: 39 mm., height: 27 mm. 50.00 grm.
PLATE IX

Cf. No. 53 for the Qur'ānic quotation.
Cf. Petrie No. 150, a *raṭl* with almost identical legend.

Ṣāliḥ b. ʻAli b. ʻAbdullāh b. ʻAbbās al-ʻAbbāsi, uncle of the first ʻAbbāsid Caliph, born in the year 92 A.H., assumed the Governorship of Egypt on 1 (or 8) Muḥarram, 133 (9 or 16 Aug., 750 A.D.), when he entered Fusṭāṭ as head of the expeditionary force which pursued the last Umayyad Caliph to Egypt. On 1 Sha'bān, 133 (4 March, 751 A.D.) he was recalled to Palestine as Governor, but in Rabīʻ I, 136 (Sept., 753 A.D.) he was again appointed Governor and Finance Director of Egypt, this time with the additional responsibility of the Governorship of Africa. He arrived on 5 Rabīʻ II, 136 (8 Oct., 753 A.D.). He was finally relieved, and returned to Palestine on 4 Ramaḍān, 137 (21 Feb., 755 A.D.).[19]

[19] A. Grohmann, *s.v.* Ṣāliḥ b. ʻAli in *Encyclopaedia of Islām*. Cf. Grohmann, *Corpus* I², pp. 108–109; Wüstenfeld II, p. 1.

CORPUS: *raṭl*
uncertain weight
qisṭ
¼ *qisṭ*
Æ coins: struck in Ḥalab (Aleppo) during his Governorship in Syria, years 146–147 A.H. (Tiesenhausen Nos. 758, 767; *BM* i, p. 200, No. 100, ix, p. 94, No. 90[k, l]; Berlin No. 2083 ff.; Paris No. 1573 ff.).

N. *'Abd al-Malik b. Yazīd*

Governor and Finance Director,
133–136 A.H.: 751–753 A.D.
137–141 A.H.: 755–758 A.D.

62–63. *One-half dīnār.*
Obverse:

بسم ا	In the name of A-
لله امر عبد	llāh: ordered 'Abd
الملك بن يز	al-Malik bin Yaz-
يد بمثقال	īd: weight
نصف واف	of one-half, full weight.

Reverse: center within circle (retrograde)

طبعه	Stamped it,
كيل	Kayl.

margin

[. . . عا]صم بن حف[ص] . . . ['Ā]ṣim bin Ḥaf[ṣ].

Two specimens. Pale green. 23 mm.; 22 mm. 2.12 grm.; 2.10 grm.
PLATE II

Cf. *BM* Nos. 10–11, a *dīnār* and a *dirham* of 'Abd al-Malik b. Yazīd, with the same legend in the reverse area. Lane-Poole did not observe that the central legend is retrograde. At first glance the first line appears to contain simply a metathesis of the ب and the ع; a

plastic impression of the reverse, however, reveals that the entire reverse area is retrograde and that the puzzling and illegible second line is the same name as that on Nos. 59 and 60. It is interesting that this retrograde legend appears on at least three different issues: the present, and *BM* Nos. 10–11. One would therefore conclude, almost certainly, that in making the die for the reverse a separate "punch" was used for the reverse area. This conclusion would in turn explain the accident that created the retrograde legend: Kayl's "punch" was "negative," which produced a "positive" on the die, and finally a "negative" (or retrograde) legend on the glass.

64. *Fals of 24 kharrūbah.*

بسم الله	In the name of Allāh:
امر الامير عبد	ordered the Amīr 'Abd
الملك بن يزيد	al-Malik bin Yazīd:
بمثقال فلس اربعة	weight of *fals* of four
وعشرين خر	and twenty *kharr-*
وبة *	*ūbah.*

Pale green. 30 mm. 4.64 grm.
PLATE II

Similar to *Fouquet Coll.*, p. 379, Nos. 29–30 (4.63 grm.); cf. Petrie No. 144, apparently lacking the star.

65–66. *Fals of 23 kharrūbah.*

Square impression:

بسم الله ا	In the name of Allāh: or-
مر عبد الملك	dered 'Abd al-Malik
بن يزيد بمثقل	bin Yazīd: weight
فلس ثلثة و	of *fals* of three and
عشرين خروبة	twenty *kharrūbah.*

Two specimens, one broken, about one-fifth lacking.
Pale green. 29 mm.; 30 mm. 4.42 grm.; 3.62 grm.
PLATE II

67. *One-quarter qisṭ of . . . .*

Vessel stamp attached to fragment of rim:

[امر]	[Ordered]
[عبد] الملك بن	[ʻAbd] al-Malik bin
[يزيد بطب]عه ربع قسـ	[Yazīd the stamp]ing of it, one-quarter *qis-*
[ط . . .] على يد (*sic*) محمـ[ـد]	[*ṭ* of . . . . .], at the hand of Muḥamma[d]
[بن شر]حبيل	[bin Shura]ḥbīl.

Green. 38 mm.

Abū-ʻAwn ʻAbd al-Malik b. Yazīd al-Azdi al-Jurjāni, also known as al-Khurāsāni, an ʻAbbāsid general with a long record of battles to his credit both before and after the ʻAbbāsid triumph, relieved his chief, Ṣāliḥ b. ʻAli (see above), as Governor and Finance Director of Egypt on 1 Shaʻbān, 133 (4 March, 751 A.D.), and served until 5 Rabīʻ II, 136 (8 Oct., 753 A.D.), when Ṣāliḥ returned. Upon Ṣāliḥ's second departure for Palestine he took over again, entering Fusṭāṭ on 26 Ramaḍān, 137 (15 March, 755 A.D.), and holding office until 15 Rabīʻ I, 141 (26 July, 758 A.D.). It was Abū-ʻAwn who built houses in al-ʻAskar, the new section of Cairo neighboring Fusṭāṭ. Later, in 144 and 150 A.H., we find him on the battlefields of Khurāsān, the land of his origin, and in 159–160 A.H. he turns up for the last time as Governor of that province under al-Mahdi.[20] He is well documented, not only in the histories, but also in the glass weights and stamps, and in coins of unusual interest.

[20] A. Grohmann, *s.v.* Ṣāliḥ b. ʻAli, in the *Encyclopaedia of Islām*. Cf. K. V. Zetterstéen, *s.v.* Abu ʻAwn, *ibid.*; Grohmann, *Corpus* I², pp. 108–109; Grohmann, *Egyptian Library*, III, pp. 101–102; Wüstenfeld II, pp. 2–5; Lane-Poole, *History*, p. 31; Casanova, *Étude*, p. 12; Zambaur, *Contribution* I, pp. 64–65. Two papyri of ʻAbd al-Malik's relating to the administration of the postal service, dated 134 A.H. and Rajab, 136 A.H., are published in D. S. Margoliouth, *Arabic Papyri*, pp. 28, 29–30.

CORPUS: *dīnār*
½ dīnār
dirham
fals of 26(?) *kharrūbah*
fals of 24 *kharrūbah*
fals of 23 *kharrūbah*
wuqīyah
qisṭ
¼ *qisṭ* of . . . . .
Æ coins: Miṣr, 133 A.H., and no date, no mint; Marw, 143 A.H.; Bukhāra, 160 A.H. (Tiesenhausen No. 664; *BM* i, p. 222, No. 163, ix, p. 102, No. 163^d; Berlin Nos. 2071, 2248, 2132^a; Paris No. 1622 ff.; Karabacek in *Numismatische Zeitschrift*, Wien, 1876, pp. 363–364; Zambaur, *Contributions* I, No. 44).

Kayl (Nos. 62–63) has been variously read as كمل and كبلى. The name of this craftsman also appears on pieces of ʻAbd al-Malik b. Yazīd under al-Manṣūr (see Nos. 59–60 above). Grohmann suggests "Chael" (χαῆλ, χαελ), a Coptic name, *e.g.*, Chael, son of Psmô.[21]

For ʻĀṣim b. Ḥafṣ (Nos. 62–63), see below.

For Muḥammad b. Shuraḥbīl (No. 67), see above, p. 97.

O. *ʻAṣim b. Ḥafṣ*

Prefect, *ca.* 133–141 A.H.: 751–758 A.D.
ca. 165–169 A.H.: 781–786 A.D.

68. *Fals* (*of 36 kharrūbah ?*).
In center:

مثقا	Weig-
ل فلس	ht of *fals*
	. . . ? . . .

[21] Grohmann, *Corpus* I^2, pp. 108–109, 113. Cf. Grohmann, *Egyptian Library*, I, p. 150.

Margin:

على يدى عاصم بن حفص At the hands of ʻĀṣim bin Ḥafṣ.

Yellowish green, iridescent. 32 mm. 6.99 grm.
PLATE II

Similar to *Fouquet Coll.*, p. 382, No. 53, slightly damaged (6.85 grm.).
The third line of the area is illegible on the Fouquet specimen as well as on this one. Could it be garbled كبير, "great"? Or can it be a cipher for "36"?

The career of the Prefect ʻĀṣim b. Ḥafṣ, unknown to me in the Arabic chronicles, unless indeed he is the person of that name who was a witness of events that took place in 127 and 129 A.H.,[22] must be reconstructed from the weights and measures. He appears as a Prefect under ʻAbd al-Malik b. Yazīd (Nos. 62–63), under al-Faḍl b. Ṣāliḥ (*BM* and Petrie), and under Ibrāhīm b. Ṣāliḥ (Ettinghausen, p. 76, footnote 16). Al-Faḍl served as interim Governor of Egypt in 136 A.H., and again as Governor from 29 Muḥarram to Shawwāl, 169 A.H. If it were not for the unpublished weight mentioned by Ettinghausen, one would say that ʻĀṣim b. Ḥafṣ had only one term of office, from about 133 to 141 (751–758 A.D.); but Ibrāhīm b. Ṣāliḥ's dates were 11 Muḥarram, 165, to 7 Dhū al-Ḥijjah, 167 (5 Sept., 781–1 July, 784 A.D.), a period nearly contemporaneous with al-Faḍl's term as Governor in 169.[23] Lacking further evidence, which we may hope will be forthcoming in supplementary written or epigraphic documents, we must, therefore, assign to ʻĀṣim b. Ḥafṣ tentative dates of *ca.* 133 to 141 (751–758 A.D.), and 11 Muḥarram, 165, to Shawwāl, 169 (5 Sept., 781–April, 786 A.D.).

CORPUS: *dīnār*
½ *dīnār*

[22] Ṭabari II, pp. 1876, 1879.

[23] Zambaur, *Manuel*, p. 26; cf. *BM*, p. 18.

fals (of 36 *kharrūbah* ?)
great *raṭl*
½ great *raṭl*
½ *qisṭ* (?)

P. *Mūsā b. Ka'b*

Governor and Finance Director, 141 A.H.: 758/9 A.D.

69. *Wuqīyah.*

Disk-weight. Roughly circular plano-convex disk, about one-half preserved, bearing stamp:

Obverse:

ب[سم الله امر ؟]	In [the name of Allāh: ordered ?]
مو س[ى بن]	Mūs[ā bin]
كعب [بمثقال (؟)و]	Ka'b, [weight (?) of *wu-*]
قية وا[ف على يدى (؟)]	*qīyah*, full [weight; at the hands ?]
محمد [بن]	of Muḥammad [bin]
شرح[بيل]	Shuraḥ[bīl].

Reverse:

Area within circle effaced.

Margin:

. . . . (؟)الله من . . . . Allāh, MN(?) . . . . .

Green. 56 mm. 15.08 grm.
PLATE VI

Mūsā b. Ka'b b. 'Uyaynah al-Tamīmi was Governor and Finance Director of Egypt from 15 Rabī' II until 24 Dhū al-Qa'dah, 141 (25 Aug., 758–28 March, 759). Before his term of office had expired he turned over the administration of the Finances to Nawfal b. Furāt (see p. 109, below).[24]

CORPUS: *wuqīyah*
qisṭ
¼ *qisṭ*

For Muḥammad b. Shuraḥbīl, see p. 97, above.

[24] Grohmann, *Corpus* I², p. 115; cf. Wüstenfeld II, pp. 5–6.

Q. *Nawfal b. Furāt*

Finance Director, 141–143 A.H.: 759–760 A.D.

70. *One-half dīnār.*

Obverse:

امر نوفل	Ordered Nawfal
بن فرات	bin Furāt
بطبعه	the stamping of it,
مثقال نصف	weight of one-half
دينر واف	*dīnār*, full weight.

Reverse: center within beaded circle

طبعه	Stamped it,
كافل	Kāfil.

margin

[عل]ى يدى عبدالر[حمن بن يزيد]	[A]t the hands of ʿAbd al-Ra[ḥman bin Yazīd].

Pale green. 22 mm. 2.09 grm.
PLATE II

Similar to *BM* No. 13. Lane-Poole transcribed the reverse area طبعه كامل, "stamped accurate," but aside from the fact that a name should follow طبعه, I believe that the third letter of the second line must be ف or ق, not م. There is, however, a contemporary official by the name of Kamil (?) (see Nos. 77–80 below), spelled كمل, which may be an abbreviated rendering of Kāmil, and it is possible that the name on the present piece is, after all, Kāmil, and not Kāfil.

The margin of the *BM* specimen is partially obliterated and is transcribed . . . . ر بن يزيد. The *BM* and the present specimens supplement each other and make clear the reading ʿAbd al-Raḥman b. Yazīd, whose name appears on other weights.

71. *Fals of 19 (or 29?) kharrūbah.*

امر نوفل بن	Ordered Nawfal bin

فرات بطبعه	Furāt the stamping of it,
مثقا (*sic*) فلس (*sic*)	weight of *fals*
تسعة وعشرة (*sic*)	of nineteen
خروبات	*kharrūbāt.*

Pale blue-green. 32 mm. 5.24 grm.
PLATE II

Similar to *BM* No. 12 (5.31 grm.).

The second word of the third line is either misspelled (*i.e.*, an extra tooth to the س), or else فلسين, "two *fals*," is intended. But two *fals* totalling 19 *kharrūbah* seems unreasonable. However, تسعة وعشرة is abnormal for "nineteen," and perhaps the legend should read تسعة وعشرين, "twenty-nine." The weight, especially of the *BM* specimen, is fairly close to the theoretical weight for 29 *kharrūbah*; it is certainly curious for 19.

72. *One-half qisṭ* (?).

Vessel stamp attached to fragment of rim:

امر نوفل	Ordered Nawfal
بن فرات	bin Furāt
بطبعه [نصف قسط ؟]	the stamping of it, [one-half *qisṭ* ?],
واف	full measure.

Stack's, N. Y., 1938. Green. 37 mm.

Nawfal b. Muḥammad b. al-Furāt, member of a family which later contributed several distinguished viziers to the 'Abbāsid court, was Finance Director of Egypt during the latter part of Mūsā b. Ka'b's Governorship (see above), and during the Governorship of Muḥammad b. al-Ash'ath (see below, p. 111); that is, from shortly before 24 Dhū al-Qa'-dah, 141, until 6 Ramaḍān, 143 (28 March, 759–19 Dec., 760 A.D.), when he was replaced by Yazīd b. Ḥātim.[25]

[25] Grohmann, *Corpus* I², p. 115; cf. Wüstenfeld II, pp. 5–6; Ṭabari III, pp. 138, 141–142; K. V. Zetterstéen, *s.v.* Ibn al-Furāt, in *Encyclopaedia of Islām*; Zambaur, *Manuel*, p. 12.

CORPUS: ½ *dīnār*
fals of 19 (or 29?) *kharrūbah*
raṭl
½ *qisṭ* (?)

ʻAbd al-Raḥmān b. Yazīd (No. 70) is a Prefect unrecorded, so far as I know, in the chronicles. The evidence of the weights, however, establishes the fact that he served under Nawfal b. Furāt and under Yazīd b. Ḥātim (see below, p. 113), *i.e.*, during an undetermined period between about 24 Dhū al-Qaʻdah, 141, and Rabīʻ II, 152 (28 March, 759–May, 769 A.D.). During Yazīd b. Ḥātim's Governorship he replaced, or was replaced by, Muḥammad b. Shuraḥbīl and Salamah.

CORPUS: *dīnār*
½ *dīnār*
⅓ *dīnār*
raṭl
1/6 *wuqīyah*
½ *qisṭ*

For the craftsman Kāfil, or Kāmil, see the discussion under No. 70.

R. *Muḥammad b. al-Ashʻath*

Governor, 141–143 A.H.: 759–760 A.D.

73. *Fals of 27 kharrūbah.*

امر الامير محمد	Ordered the Amīr Muḥammad
بن الاشعث على يدى	bin al-Ashʻath, at the hands
عبد الله بن راشد	of ʻAbdullāh bin Rāshid,
بطبعه مثقال فلس	the stamping of it, weight of *fals*
سبعة وعشرين	of seven and twenty
خروبة	*kharrūbah.*

Pale green. 30 mm. 5.25 grm.
PLATE II

74. *Fals of* 27 *kharrūbah.*

امر الامير	Ordered the Amīr
محمد بن الاشعث	Muḥammad bin al-Ash'ath,
على يدى عبد الله	at the hands of 'Abdullāh
بن راشد بطبعه مثقا	bin Rāshid, the stamping of it, weig-
ل فلس سبعة و	ht of *fals* of seven and
عشرين خروبة	twenty *kharrūbah.*

Pale green. 31 mm. 5.25 grm. Nies No. XI.

75. *Qisṭ.*

Vessel stamp attached to fragment of rim:

بسم ال[له]	In the name of Al[lāh]:
امر الامير محم[د بن]	ordered the Amīr Muḥamma[d bin]
الاشعث بط[بعه]	al-Ash'ath the stamping of it,
قسط واف	*qisṭ*, full measure;
[على] يدى عبد الله	[at] the hands of 'Abdullāh
بن راشد	bin Rāshid.

Green. 41 mm.
PLATE XIV

Muḥammad b. al-Ash'ath b. 'Uqbah al-Khuzā'i was Governor of Egypt from 6 Dhū al-Ḥijjah, 141, until the beginning of 143 (9 April, 759–760 A.D.). The historical reports are in part contradictory: Ṭabari, for example, writes that he was removed in 142 A.H., but Grohmann prefers the better-informed accounts of al-Kindi, Maqrīzi and Ibn-Taghri-Birdi.[26]

CORPUS: *dīnār*
fals of 27 *kharrūbah*
uncertain coin weight
qisṭ
½ *qisṭ*
uncertain measures

[26] Grohmann, *Corpus* I², p. 115. Cf. Wüstenfeld II, p. 6; Ṭabari III, pp. 138, 141, 353. Casanova (*Étude*, p. 12, and in the Fouquet Collection Catalogue) misnames this Governor's father "al-Ash'ab."

ʿAbdullāh b. Rāshid (Nos. 73–75) is a Prefect who, so far as present evidence reveals, was associated only with Muḥammad b. al-Ashʿath. He was possibly ʿAbdullāh b. Rāshid b. Yazīd al-Akār, a witness cited by Ṭabari in relating events of the years 144–145 A.H.[27]

CORPUS: *fals* of 27 *kharrūbah*
qisṭ
½ *qisṭ*
uncertain measures

S. *Yazīd b. Ḥātim*

Governor, 144–152 A.H.: 762–769 A.D.

76. *Dīnār.*

بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr
يزيد بن حاتم	Yazīd bin Ḥātim:
مثقال دي	weight of *dī-*
نر	*nār.*

Pale green. 29 mm. 4.23 grm.
PLATE II

77–78. *Dīnār.*

Obverse:

بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr
يزيد بن حاتم	Yazīd bin Ḥātim:
مثقال دينر	weight of *dīnār*,
وف	(full weight).

Reverse: center within circle

طبعه	Stamped it,
كمل	Kamil.

27 Ṭabari III, pp. 156, 182, 223, 250, 295, 305. The only source given by Caetani in his *Onomasticon Arabicum* (Vol. II, p. 940) is the glass.

margin

على يدى عبد الرحمن بن يزيد At the hands of ʿAbd al-Raḥman bin Yazīd.

Two specimens. Pale blue-green; yellowish green. 29 mm.; 30 mm. 4.16 grm.; 4.21 grm.
PLATE II

Cf. *BM* Nos. 14–15 (4.27 grm.), which lack the crescent at the top and the ornament and letter at the bottom.

For Kamil, see above, No. 70.

79. *One-half dīnār.*

Obverse:

بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr
يزيد بن حاتم	Yazīd bin Ḥātim:
مثقال نصف	weight of one-half,
واف	full weight.

Reverse: center within circle

طبع[ه]	Stamped [it]
كم[ل]	Kami[l].

margin

[على يدى عبد ال]رحمن بن يزيد [At the hands of ʿAbd al]-Raḥman bin Yazīd.

Yellowish green. 22 mm. 2.12 grm.
PLATE II

Similar to *Fouquet Coll.*, p. 380, No. 33, with legends incomplete (2.06 grm.). Obverse similar to Petrie Nos. 162–164.

80. *One-third dīnār.*

Obverse:

بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr

يزيد بن حاتم	Yazīd bin Ḥātim:
مثقال ثلث	weight of one-third,
واف	full weight.

Reverse: center within circle

طبعه	Stamped it,
كمل	Kamil.
•	

margin

[على يدى] عبد الرحمن [بن يزيد]	[At the hands] of ʻAbd al-Raḥman [bin Yazīd].

Yellowish green. 20 mm. 1.43 grm.
PLATE II

Similar to *BM* Nos. 16–17 (1.42 grm.).

81. *Raṭl.*

Fractured ring-weight bearing two stamps on top surface:

(*a*) بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr
يزيد بن حاتم	Yazīd bin Ḥātim,
اصلحه ا[لله]	may [Allāh] mend him.
(*b*) بسم الله	In the name of Allāh:
على يدى عبد	at the hands of ʻAbd
الرحمن بن يزيد	al-Raḥman bin Yazīd:
رطل واف	*raṭl*, full weight.

Yellowish green. Stamp (*a*): 28 mm. (*b*): 43 mm. Piece, length: 79 mm., width: 48 mm., height: 35 mm. 199.0 grm.
PLATE IX

Similar to Petrie No. 159, stamp (*a*) fragmentary. Petrie's hypothetical restoration of the last line of stamp (*a*) is to be corrected in view of the present specimen.

82. *Wuqīyah* (?).

Disk-weight. Slightly more than one-half of circular plano-convex disk, bearing stamp:

امر الامي[ر]	Ordered the Amī[r]
يزيد ب[ن حا]	Yazīd b[in Ḥā-]
تم على [يدى]	tim, at [the hands]
سلا[مة]	of Sala[mah]:
و[قية ؟]	w[*uqīyah* ?].

Green. 54 mm. 19.10 grm.
PLATE VI

83. *Uncertain measure.*

Vessel stamp attached to fragment of rim:

بسم الله	In the name of Allāh:
امر الامير	ordered the Amīr
يزيد بن حاتم	Yazīd bin Ḥātim,
[اصـ]لحه الله	may Allāh [m]end him.

Brownish green. 33 mm.

Similar to *Fouquet Coll.*, p. 371, No. 145, and to Petrie Nos. 169–170, where the benedictory phrase has been misread.

Abū-Khālid Yazīd b. Ḥātim b. Qabīṣah al-Muhallabi relieved Nawfal b. Furāt and was Governor of Egypt from 16 Dhū al-Qa'dah, 144, until Rabī' II, 152 (15 Feb., 762–May, 769 A.D.). Later, from 154 until his death on 18 Ramaḍān, 170 (771–787 A.D.), he served as Governor of Africa. His Governorship was made uneasy by 'Alid rebellions and by a Khārijite insurrection in Abyssinia, as a result of the suppression of which Yazīd was rewarded by having Cyrenaica added to his domain.[28]

[28] Grohmann, *Corpus* I², pp. 115, 119. Cf. Grohmann, *Egyptian Library*, III, pp. 177–178; Wüstenfeld II, p. 7; Balādhuri, p. 233; Ṭabari III, p. 142; Lane-Poole, *History*, p. 32; Zambaur, *Manuel*, pp. 26, 63.

CORPUS: *dīnār*
½ dīnār
⅓ dīnār
raṭl
wuqīyah
qisṭ
uncertain measures

I cannot say whether Salamah (No. 82, and on a *qisṭ* stamp in the Fouquet Collection) is the same Salamah who issued weights and measures and whom I have tentatively identified as Salamah b. Rajā' (see p. 127, below).

For ʿAbd al-Raḥmān b. Yazīd (Nos. 77–81), see above, p. 111.

T. *Muḥammad b. Saʿīd*

Governor, 152–157 (?) A.H.: 769–774 (?) A.D.

84. *Raṭl.*

Fractured ring-weight bearing two stamps on top surface:

(*a*) (circular)

بسم الله	In the name of Allāh:
امر الا[مير]	ordered the Am[īr]
محمد بن [سعيد]	Muḥammad bin [Saʿīd],
رط[ل واف]	*raṭ*[*l*, full weight].

(*b*) (rectangular)

على يدى	At the hands
قسيم(؟)	of Qasīm (?)
بن زياد(؟)	bin Ziyād (?)

The rectangular stamp is identical with that on No. 49 below.

Opaque yellowish green. Stamp (*a*): 34 mm. (*b*): 21 × 18 mm. Piece, length: 51 mm., width: 43 mm., height: 54 mm. 148.0 grm.

PLATE IX

Similar to Petrie, No. 183.

It is not at all certain that Muḥammad b. Sa'īd b. 'Uqbah was Governor throughout the period 152–157 A.H. (769–774 A.D.), nor, in fact, that he was Governor at all. But there can be no doubt that he was at least Finance Director during part of this period. In one tradition he came after Yazīd b. Ḥātim, and in the other he does not appear at all.[29]

CORPUS: *dīnār*
½ *dīnār*
uncertain coin weight
raṭl
½ *raṭl*
¼ *qisṭ*
Æ coin: no mint, no date (Zambaur, *Contributions*, II, No. 264; cf. Tiesenhausen, No. 2547).

The Prefect Qasīm b. Ziyād[30] is unknown. It is evident, however, that his tenure of office extended beyond the Governorship of Muḥammad b. Sa'īd into that of Maṭar, for the identical auxiliary stamp which appears on No. 84 is present on a *raṭl* issued by Maṭar, No. 94. Inclusive dates for Qasīm (?) must therefore be 152–159 (769–776 A.D.).

[29] Grohmann, *Corpus* I², pp. 119–120; cf. Zambaur, *Contributions*, II, p. 144, footnote 67. Cf. Adolf Grohmann, "Arabische Papyri aus den Staatlichen Museen zu Berlin," in *Der Islam*, XXII, 1935, pp. 13–14 (No. 3), where Muḥammad b. Sa'īd in a document dated 153 A.H. uses the title *amīr*, possibly but not necessarily implying that he was at this time acting as Governor.

[30] I am not at all confident that I have read the name correctly; Petrie read "Qasah (?) ibn Yezyd."

U. *The Caliph al-Mahdi*[31]

158–169 A.H.: 775–785 A.D.

85. *One-third dīnār.*

بسم الله	In the name of Allāh:
امر المهدى	ordered al-Mahdi,
امير المؤمنين	Commander of the Believers:
مثقال ثلث	weight of one-third,
واف	full weight.

Pale blue-green. 18 mm. 1.42 grm.

Cf. *Fouquet Coll.*, p. 380, No. 35 (1.43 grm.), denomination effaced, but by weight clearly a third, not a half, *dīnār* (as indicated); similar to obverse of Petrie Nos. 200–201 (1.41 grm.), first letter of second line transcribed on first line.

86. *Uncertain denomination, coin weight.*

بسم الله	In the name of Allāh:
امر المهدى (؟)	ordered al-Mahdi (?):
مثقال د	weight of . . . .
. . . . عو واف	. . . ., full weight.

Pale blue-green. 22 mm. 2.09 grm. (much worn).

87. *One-half dīnār.*

Obverse:

بسم الله	In the name of Allāh:
امر اميرا	ordered the Commander of th-
لمؤمنين مثقال	e Believers: weight
نصف واف	of one-half, full weight.

Reverse: center within circle

مطر	Maṭar

[31] The arrangement of the pieces under al-Mahdi is according to the succession of the secondary officials mentioned, and then according to denominations under these officials.

margin

. . . . سة بن زيا[د؟]	. . . sah bin Ziyā[d?].

Pale green. 22 mm. 2.11 grm.
PLATE II

88. *One-third dīnār.*

Obverse:

بسم الله	In the name of Allāh:
امر اميرا	ordered the Commander of th-
لمؤمنين مثقال	e Believers: weight
ثلث واف	of one-third, full weight.

Reverse: center within circle

مطر	Maṭar

margin

[. . . الام]ير محمد . . .	[. . . the Am]īr Muḥammad . . .

Pale green. 19 mm. 1.43 grm.
PLATE II

89. *One-third dīnār.*

Obverse:

بسم الله	In the name of Allāh:
امر المهدى ا	ordered al-Mahdi, Com-
مير المؤمنين	mander of the Believers:
مثقال ثلث	weight of one-third,
واف	full weight.

Reverse: center within circle

طبعه ا	Stamped it a-
لمهاجر	l-Muhājir.
•✱•	

margin

[على يدى الامير] محمد بن سليم[ن]	[At the hands of the Amīr] Muḥammad bin Sulayma[n].

Yellowish green. 20 mm. 1.43 grm.
PLATE III

Cf. *BM* No. 21, a third-*dīnār* where the name on the

reverse margin is not preserved (1.42 grm.), and *BM* No. 20, a half-*dīnār* issued by the same functionaries. Lane-Poole's reading of the final letters on the reverse margin should be amended to read: سليمن. Apparently similar to Petrie Nos. 200–201, name in the margin of the reverse not preserved.

90. *Dīnār.*

Obverse:

بسم الله ام[ر]	In the name of Allāh, order[ed]
المهدى محمد	al-Mahdi Muḥammad,
امير المؤمنين	Commander of the Believers,
امتع الله له	may Allāh give him long enjoyment:
مثقال دينر	weight of *dīnār*,
واف	full weight.

Reverse: margin

[على ي]دى واضح مولى امير	[At the ha]nds of Wāḍiḥ, Freedman of the Commander

center within beaded circle

المؤ	of the
منين	Believers.

Metropolitan Museum, 89.2.243. Green. 28.5 mm. 4.25 grm.
PLATE III

Obverse similar to *BM* No. 23.

91. *One-half dīnār.*

Obverse:

بسم الله	In the name of Allāh:
المهدى امير	al-Mahdi, Commander
المؤمنين مثقا	of the Believers: weigh-
ل نصف و	t of one-half, full
اف	weight.

Reverse: margin

Traces of inscription

[الامير واضح مولى امير] [The Amīr Wāḍiḥ, Freedman of the Commander]

center within circle

المؤ	of the
منين	Believers.

Yellowish green. 22 mm. 2.12 grm.

PLATE III

Similar to a specimen described by Karabacek in a review of Stickel and Tiesenhausen, "Die Werthbezeichnungen auf muhammedanischen Münzen," in *Numismatische Zeitschrift*, Wien, 1879, p. 405 (2.125 grm.).

92–93. *Dīnār.*

Obverse:

* بسم الله امر	In the name of Allāh:
المهدى محمد	al-Mahdi Muḥammad,
امير المؤمنين	Commander of the Believers,
امتع الله له	may Allāh give him long enjoyment:
مثقال دينر	weight of *dīnār*,
واف	full weight.

Reverse: margin within beaded circle

. . . [ا]لامير ابرهيم . . . . [th]e Amīr Ibrahīm [bin]

center within beaded circle

صا	Ṣā-
لح	liḥ.

Two specimens. Yellowish green. 31 mm.; 29 mm. 4.21 grm.; 2.25 grm.

PLATE III

Slightly more than one-half of the second specimen is preserved.

Cf. *BM* No. 23, a *dīnār* with identical obverse but with the name of Ismāʿīl on the reverse (4.27 grm.);[32] and *BM* No. 25, a half-*dīnār* with the same reverse but only the name Ibrāhīm preserved in the margin.

The exact dates of the ʿAbbāsid Caliph al-Mahdi's rule were 6 Dhū al-Ḥijjah, 158, to 22 Muḥarram, 169 (7 Oct., 775–4 Aug., 785 A.D.).

Casanova[33] maintained that the weights bearing al-Manṣūr's and al-Mahdi's names alone were issued during periods when those Caliphs appointed no Finance Directors, that is, when they were, so to speak, their own Treasurers. His argument is based on the failure of Ibn-Taghri-Birdi to mention the names of the Finance Directors between the years 152–158 and 158–162. The suggestion is interesting, and perhaps correct in part; but Grohmann, citing a papyrus, has pointed out that there was a Finance Director, a certain Khaṭṭāb b. Maslamah, at least in 159–161.[34] Also it is apparent that Muḥammad b. Sulaymān (see below), not only as Prefect but also as Governor, functioned as Finance Director.

CORPUS: *dīnār*
½ dīnār
⅓ dīnār
dirham, of Syria (*Mélanges Syriens*, *Dussaud*)
uncertain weight (Fraehn, *Nova Supplementa*)
uncertain weight (above)

The identification of al-Muhājir (No. 89) with al-Muhājir b. ʿUthmān, Chief of the Bodyguard under Muḥammad b. al-Ashʿath, proposed by Lane-Poole,[35] is unlikely.

[32] A half fragment similar to this is in the possession of Miss Florence Day.

[33] *Fouquet Collection*, pp. 343 ff.

[34] *Arabische Eichungsstempel*, p. 147.

[35] *BM*, p. 14. Cf. Wüstenfeld II, p. 6.

For Maṭar (Nos. 87–88), see below.
For Muḥammad b. Sulaymān (No. 89), see p. 125, below.
For Wāḍiḥ (Nos. 90–91), see p. 128, below.
For Ibrāhīm b. Ṣāliḥ (Nos. 92–93), see p. 130, below.

V. *Maṭar, Freedman of al-Manṣūr*

Governor, 157–159 A.H.: 773–776 A.D.

94. *Raṭl.*

Fractured ring-weight bearing two stamps on top surface:

(*a*) (circular)

بسم الله امر	In the name of Allāh: ordered
مطر مولى امير	Maṭar, Freedman of the Commander
المؤمنين اكرمه	of the Believers, may be generous to him
الله رطل واف	Allāh: *raṭl*, full weight.

(*b*) (rectangular)

على يدى	At the hands
قسيم(؟)	of Qasīm (?)
بن زياد(؟)	bin Ziyād (?).

The last line is very obscure. This stamp is identical with that on No. 84 above.

Stamp (*a*): 35 mm. (*b*): 21 × 19 mm. Piece, length: 64 mm., width: 46 mm., height: 25 mm. 124.0 grm. Nies No. XIV.
PLATE IX

Maṭar, a *mawlā* (or Freedman) of the Caliph al-Manṣūr, was, according to one tradition, Governor of Egypt during the years 157–159 (773–776 A.D.); according to another he governed only in the year 159. In either case the exact dates are unknown, but it is certain that his term expired before the end of 159, because Muḥammad b. Sulaymān succeeded him in that year.[36] We have already met his name in conjunction with that of al-Mahdi on two coin weights (Nos. 88–89).

[36] Grohmann, *Corpus* I², p. 119; cf. Ṭabari III, pp. 380, 467; Zambaur, *Manuel*, p. 26 (159 A.H. only).

CORPUS: ½ *dīnār*
⅓ *dīnār*
raṭl
Æ coins: Qinnasrīn, no date (Paris No. 1601; cf. Tiesenhausen No. 2626).

For Qasīm b. Ziyād (?), see p. 118, above.

W. *Muḥammad b. Sulaymān*

Governor, 159–161 A.H.: 775–778 A.D.

95–96. *One-third dīnār.*

Obverse: star in center, surrounded by double circle.

Margin

بسم الله مثقال ثلث دينر	In the name of Allāh: weight of one-third *dīnār*.

Reverse: (stamped off-center)

على يد[ى]	At the hand[s]
[محـ]ـمد (؟)	[of Muḥa]mmad (?)
بن سلـ[ـيمن]	bin Sula[yman ?].

Two specimens. Light brown. 20 mm.; 20 mm. 1.43 grm.; 1.27 grm. (worn).
PLATE III

The reverse of the worn specimen is illegible except for the first word.

Cf. *Fouquet Coll.*, p. 377, No. 9, a half-*dīnār* with a star in the center surrounded by 8 points, without reverse inscription.

97. *Raṭl.*

Fractured ring-weight bearing two stamps on top surface:

(*a*)	بسم الله امـ[ـر]	In the name of Allāh: order[ed]
	الامير محمد	the Amīr Muḥammad
	بن سليمن اكرمـ[ـه]	bin Sulayman, may be generous to [him]
	الله رطل واف	Allāh: *raṭl*, full weight.

(*b*)	على يدى	At the hands
	[ابى ؟] بكر	[of Abī (?)–] Bakr
	بن تميم	bin Tamīm.

Dark green. Stamp (*a*): 31 mm. (*b*): 21 mm. Piece, length: 54 mm., width: 47 mm., height: 22 mm. 89.00 grm.
PLATE X

98. *One-quarter raṭl.*

Disk-weight. Fragment, about two-thirds preserved, of ovoid plano-convex disk, bearing three stamps on the convex side, of which the first two are completely preserved and the third about one-half preserved:

(*a*) (circular)

بخ	Bravo!
ربع	One-quarter
رطل	*raṭl*,
واف	full weight.

(*b*) (circular)
Same as (*a*)

(*c*) (rectangular)
At top: [محمـ]ـد ابن سليمن [Muḥamma]d (?) ibn Sulayman,
At left side: ابقاه اللّ[ه] may Allā[h] preserve him.

(Inscriptions at bottom and right, and in center (?), missing due to fracture.)

Stamp: (*a*), (*b*): 19 mm. (*c*): *ca.* 20 mm.
Piece, max. di.: 38 mm. 63.50 grm.
PLATE VI

Abū-Ḍamrah Muḥammad b. Sulaymān, according to the Ṭabari tradition, replaced Maṭar as Governor of Egypt in 159 and remained in office until Dhū al-Ḥijjah, 161 (776–Sept., 778 A.D.).[37] No. 89, above, shows that previous to his

[37] There is a good deal of confusion among the chroniclers with respect to the succession of the Governors of Egypt between Yazīd b. Ḥātim and 'Īsā b. Luqmān. The two principal traditions are set forth by Grohmann, *Corpus* I², pp. 119–121. Cf. Ṭabari III, pp. 467, 470, 492. Zambaur, *Manuel*, p. 26,

Governorship he was a Prefect for al-Mahdi; and Nos. 95–96 also imply that he was not Governor at the time these one-third *dīnār* weights were issued.

CORPUS: ½ *dīnār*
⅓ *dīnār*
raṭl

The name of Abū-Bakr b. Tamīm (?) (No. 97) is too uncertain to warrant a long search for his identification.

X. *Salamah* (*b. Rajā'* ?)

(Governor, 161–162 A.H.: 778 A.D.)

99–100. *Fals* (*of 30 kharrūbah ?*).

Square stamp within border of dots:

سلمة	Salamah
	(30 *kharrūbah* ?).

Two specimens. Yellowish green; green.
31 mm.; 31 mm. 5.80 grm.; 5.80 grm.
PLATE III

Similar to *Fouquet Coll.*, p. 383, No. 72 (5.80 grm.); Petrie No. 189 (5.77 grm.).

101. *Uncertain measure.*

Vessel stamp attached to fragment of rim:

على يدى	At the hands
سلمة	of Salamah.

Green. 26 mm.

Similar to *Fouquet Coll.*, p. 374, No. 185.

The identification of Salamah with Salamah b. Rajā', Gov-

has 'Īsā b. Luqmān's term beginning on 16 Dhū al-Ḥijjah, 161; and he assigns a second term to Muḥammad b. Sulaymān in 162. Casanova and Petrie are mistaken in identifying this official with a Governor named by al-Muktafi in 292 A.H.

ernor of Egypt for a very short period from Dhū al-Ḥijjah, 161, to Muḥarram, 162 (end of August to beginning of Oct., 778),[38] can only be hypothetical. There is, in fact, very little to be said in support of the identification other than that Salamah was associated with officials a few years before the Governorship of Salamah b. Rajā', *i.e.*, Yazīd b. Ḥātim (No. 82 and see p. 117, above) and Muḥammad b. Sa'īd (a *raṭl* in the Fouquet Collection); and it might therefore be argued that he was a Prefect previous to his Governorship. Definitely against the identification is the absence of any stamp with title and full name, and the extremely short period during which Salamah b. Rajā' governed.

CORPUS: *fals* of 33 *kharrūbah*
fals of (30 *kharrūbah*)
fals of 24 *kharrūbah*
fals ("proof"?) (Petrie)
raṭl
wuqīyah (?)
qisṭ
measure of chick-peas
uncertain measures

Y. *Wāḍiḥ, Freedman of al-Mahdi*

Governor, 162 A.H.: 779 A.D.

102. *Uncertain measure.*

Vessel stamp:

[مما] امر به	[Of what] ordered
[الام]ير واضح	[the Am]īr Wāḍiḥ,
[مولى ام]ير المؤمنين	[Freedman of the Comm]ander of the Believers,
[. . .] الله على يدى	[May] Allāh . . . . , at the hands

[38] Grohmann, *Corpus* I^2, pp. 119, 120. Cf. Ṭabari III, pp. 492, 493; A. Grohmann, *s.v.* Salamah b. Rajā' in *Encyclopaedia of Islām*; Casanova, *Mélanges Schlumberger*, p. 297.

منصور (؟) سر بن . . . of . . . . . . SR bin (?) Manṣūr,

. . . .

Pale green. 32 mm.

Wāḍiḥ, a *mawlā* (Freedman) of the Caliph al-Mahdi, was Governor and Finance Director of Egypt for about four months in the year 162, probably from 24 Jumādā I to 11 Ramaḍān (16 Feb.–1 June, 779).[39] The use of على يدى in No. 90 would imply that he was a Prefect before he became Governor. Later he was Postmaster of Egypt; and he came to an unhappy end in 169 (785 A.D.) when al-Mahdi's successor had him executed for his 'Alid sympathies.[40]

CORPUS: ½ *dīnār*
wuqīyah
uncertain measures

I make no attempt to identify the Prefect whose name is imperfectly preserved on No. 102.

Z. *Ismā'īl b. Ibrāhīm*

Finance Director, 164 A.H.: 780–781 A.D.

103. *One-half qisṭ.*

Vessel stamp:

[بسم الله]	[In the name of Allāh:]
[الا]مير اسم[عيل بن]	[the A]mīr Isma['īl bin]
[ا]برهيم اكر[ر]	[I]brahīm, may be gen[er-]
[م]ه الله نصـ[ـف]	[ous] to him Allāh: one-hal[f]

[39] There are varying reports of the months of his office. Ṭabari III, p. 493, has Jumādā II to Dhū al-Qa'dah. Grohmann, *Corpus* I², p. 124, accepts the dates given above. Cf. Wüstenfeld II, p. 10.

[40] Cf. Karabacek, review of Stickel and Tiesenhausen, "Die Werthbezeichnungen auf muhammedanischen Münzen," in *Numismatische Zeitschrift*, Wien, 1879, pp. 405–406.

قسط واف	*qisṭ*, full measure.

Metropolitan Museum, 08.256.8. Green. 31.5 mm.
PLATE XIV

Similar to Petrie No. 204.

104. *One-quarter qisṭ.*

Vessel stamp:

مما امر [به الا]	Of what ordered [the A-]
مير اسمعي[ل بن]	mīr Isma'ī[l bin]
ابرهيم اكر[ر]	Ibrahīm, may be gen[er-]
مه الله رب[ع]	ous to him Allāh: one-quart[er]
[ق]سط واف	[*qi*]*sṭ*, full measure.

Green. 29 mm. Nies No. XIII.
PLATE XIV

Abū-Qatīfah Ismā'īl b. Ibrāhīm, a *mawlā* of the Banī Asad, was Finance Director of Egypt during the year 164, entering into office on 12 Muḥarram (17 Sept., 780 A.D.).[41]

CORPUS: *qisṭ*
½ *qisṭ*
¼ *qisṭ*

AA. *Ibrāhīm b. Ṣāliḥ*

Governor, 165–167 A.H.: 781–784 A.D.
Finance Director, 174 A.H.: 790/1 A.D.
Governor, 176 A.H.: 792 A.D.

105. *Uncertain weight.*

Disk-weight. Fragment, about three-fifths (?) preserved, of ovoid plano-convex disk, bearing three (or more?) stamps on the convex side, of which one is almost completely preserved. The impress of a second is almost complete but its inscription is obliterated.

[41] Al-Kindi, Kitāb al-'Umarā' wa-Kitāb al Quḍāh, ed. Guest, *Gibb Memorial Series*, Vol. XIX, Leyden, 1912, p. 123.

A small fraction of a large rectangular stamp is preserved in the center (?), containing only one or two letters.

(*a*) (circular)	مما امر به الامير	Of what ordered the Amīr
	ابرهم بن صلح	Ibrahīm bin Ṣaliḥ,
	اكرمه [الله]	may [Allāh] be generous to him.
(*c*) (rectangular)	. . . س	. . . . . S (?).

Stamp (*a*): 20 mm. (*b*): 17 mm. (*c*): ? Piece, max. di.: 84 mm., thickness: 23 mm. 101.0 grm.

Ibrāhīm b. Ṣāliḥ b. 'Ali b. 'Abdullāh b. al-'Abbās was named Governor of Egypt at the end of Dhū al-Ḥijjah, 164, arrived in Fusṭāṭ on 11 Muḥarram, 165, and was relieved on 7 Dhū al-Ḥijjah, 167 (5 Sept., 781–1 July, 784 A.D.). In 174 (790–791 A.D.) he served as Finance Director; and again as Governor as well as Finance Director, from 15 Jumādā I, 176, until his death on 3 Sha'bān of that year (7 Sept.–23 Nov., 792 A.D.).[42]

Whether Ibrāhīm was Prefect, Governor or Finance Director when he issued the *dīnār* weights in al-Mahdi's name is not clear (Nos. 92–93). Associated with him at various times were 'Āṣim b. Ḥafṣ (see above, p. 107), a certain Ṣāliḥ b. 'Īsā (*BM*), and a doubtful 'Abdullāh b. Yazīd (Petrie).

CORPUS: *dīnār*
- ½ *dīnār*
- *raṭl*
- great *raṭl*
- ¼ *raṭl*
- uncertain weight
- uncertain measures
- Æ coin: Miṣr, 167 A.H. (Khedivial No. 863)

[42] Grohmann, *Corpus* I², pp. 128–129. Cf. Wüstenfeld II, pp. 12, 19.

BB. *Mālik b. Dalham*

Governor, 192–193 A.H.: 808 A.D.

106. *Dīnār.*

Obverse: within a circle and arranged in a square, a star in center

At top: مما امر به الا Of what ordered the A|mīr
At left: مير مالك Mālik| bin Dalham, m|ay Allāh
At bottom: بن دلهم ا preserve him: weight| of *dīnār*,|
At right: بقاه الله full| weight.

within the above inscription

At top: مثقال
At left: دينر
At bottom: وا
At right: ف

Reverse: three concentric circles, with a star within the centermost

inner margin illegible
outer margin · · · · · مما امر به الامير مالك Of what ordered the Amīr Mālik . . .

Pale green, slightly iridescent. 28.5 mm. 4.13 grm.
PLATE III

Cf. *Fouquet Coll.*, p. 381, No. 43 (3.90 grm.), lacking the reverse, and ابقاه الله misread بسم الله; and Petrie No. 214 (4.19 grm.), also lacking the reverse, and the benedictory phrase misread.

Mālik b. Dalham b. ʿĪsā b. Mālik al-Kalbi was Governor and Finance Director of Egypt from 22 Rabīʿ II, 192, until 4 Ṣafar, 193 (25 Jan.–27 Nov., 808 A.D.).[43]

CORPUS: *dīnār*

[43] Ibn-Taghri-Birdi, I, pp. 542 ff., 546; cf. Wüstenfeld II, p. 25. Zambaur, *Manuel*, p. 27, gives 22 Rabīʿ II, 193–3 Rabīʿ I, 193.

CC. *Al-Ḥasan b. al-Baḥbāḥ*

Governor, 193–194 A.H.: 808–810 A.D.

107. *Dīnār.*

Center, within partially double circle:

مثقال	Weight
دينر	of *dīnār*,
واف	full weight.

Margin, within circle:

مماامر به الامير الحسن بن الحباح (*sic*) ابقاه[؟]	Of what ordered the Amīr al-Ḥasan bin al-Baḥbāḥ, may (Allāh) preserve him (?).

Cobalt blue. 30 mm. 4.23 grm.
PLATE III

108. *Dīnār.*

Similar to No. 107, but ∴ after دينر, and area within triple circle. The second name is almost entirely effaced, and the legend appears to end with ابقاه الله.

Broken and mended, rev. considerably worn.
Pale blue-green. 28 mm. 3.57 grm.

Similar to *Fouquet Coll.*, p. 382, No. 50 (4.18 grm.), which appears to be from the same die. The transcription of the marginal legend is probably in error, although the second name as it appears in obscure form on No. 109 below does, to be sure, resemble "al-Ḥusayn."

109. *Dīnār.*

Similar to No. 108, probably the same die, but the second name is distorted and somewhat resembles الحسين.

Pale green. 29 mm. 4.16 grm.

Abū-'Ali al-Ḥasan b. al-Baḥbāḥ b. al-Tashtakān al-Balkhi, evidently a Turk from Khurāsān, who was appointed Governor of Egypt on 4 Ṣafar, 193, entered Fusṭāṭ on 4 Rabī' I and was in office until 22 Rabī' I, 194 (26 Dec., 808–3 Jan., 810 A.D.).[44]

CORPUS: *dīnār*

DD. *Abū-Ja'far Ashinās*

Viceroy, 219–230 A.H.: 834–844 A.D.

110. *Raṭl. Year 22x A.H.: ca. 838 A.D.*

Complete ring-weight, chipped at one side and on the top around the periphery of the large concavity which fills the entire top surface, bearing stamp:

مما امر به الام[ير]	Of what ordered the Am[īr]
[ا]بو جعفر اشناس [مولى]	[A]bū Ja'far Ashinās, [Freedman]
امير المؤمنين اعز[ه الله]	of the Commander of the Believers, may [Allāh] strengthen [him],
[ع]لى يدى الامير محمد [بن]	[a]t the hands of the Amīr Muḥammad [bin]
[بس]طام الرقعاى [؟] مولى	Bisṭām al-Ruq'ā'i (?), Freedman
[امير] المؤمنين سنة	[of the Commander] of the Believers; year
. . . وعشرين وما	. . . . . . and twenty and two-
[ئت]ين رطل واف	[hun]dred: *raṭl*, full weight.

Green. Stamp: 38 mm. Piece, length: 60 mm., width: 47 mm., height: 78 mm. 398.53 grm.

PLATE X

Cf. *BM* No. 27G, a half-*wuqīyah* weight, dated 223

[44] Ibn-Taghri-Birdi, I, pp. 546–547; Muḥammad b. 'Abdus al-Jahshiyāri, Kitāb al-Wuzarā' wa-al-Kuttāb (ed. Hans v. Mzik, *Bibliothek Arabischer Historiker und Geographen*, Leipzig, 1926), pp. 235–236. Cf. Grohmann, *Corpus* I², p. 142; Wüstenfeld II, p. 26; Zambaur, *Manuel*, p. 27, and p. 387, where he gives the form al-Baḥbāḥ, which incidentally is the form given by Ibn-Taghri-Birdi, in place of al-Takhtāḥ.

A.H., with a similar inscription (except نصف وقية in place of رطل واف). Lane-Poole misread ابو وحار (*sic*) following Bisṭām. The *BM* reproduction shows that the word is the same as that on the present specimen.

Abū-Ja'far Ashinās, a freedman of the Caliph al-Mu'taṣim, was invested with the overlordship of Egypt by that Caliph in 219 (834 A.D.), and from that time until his death on 3 (or 20) Rabī' I, 230 (18 Nov. or 5 Dec., 844 A.D.), he exercised supreme authority in Egypt. The Caliph al-Wāthiq in 227 (842 A.D.) confirmed him in that office and extended his area of authority to include the entire region between Baghdad and the Maghrib (North Africa).[45] That his authority already extended beyond Egypt into 'Irāq is evidenced by the coin of 223 A.H. cited in the corpus below.

CORPUS: *raṭl*

½ wuqīyah

Æ coins: Al-Rāfiqah, 223 A.H., and no mint, no date (Tiesenhausen, Nos. 1857, 2568).

The Prefect Muḥammad b. Bisṭām remains unidentified. I am not at all certain of the *nisbah*, the letters of which, however clear, can be read in a number of different ways. I have transcribed it as al-Ruq'ā'ī, possibly derived from الرقعة, a place in al-Yamāmah (Yāqūt, ed. Wüstenfeld, II, p. 800).

[45] Grohmann, *Corpus* I², p. 147.

II. UNIDENTIFIED OFFICIALS

A. *Abān b. Ibrāhīm*

111. *Uncertain measure.*

Vessel stamp:

على يدى	At the hands
ابان بن	of Abān bin
ابرهيم	Ibrahīm.

Brown. 33 mm.
PLATE XIV

Probably similar to *Fouquet Coll.*, p. 374, No. 191, transcribed Sinān, in place of Abān, but the illustration shows that the right side of the specimen is effaced and "Sinān" is a reconstruction.

The Prefect Abān b. Ibrāhīm is unidentified. His name does not appear in Caetani's *Onomasticon Arabicum* and it can therefore be assumed to be unknown in Arabic historical literature.

CORPUS: uncertain measures (the present stamp and the one in the *Fouquet Collection* cited above).

B. *Isḥāq b. Manṣūr*

112. *One-half* (?) *wuqīyah.*

Disk-weight. Complete ovoid plano-convex disk, bearing two rectangular stamps at right angles to each other and slightly overlapping:

(*a*)	مما امر به	Of what ordered
	اسحق بن	Isḥaq bin
	منصور	Manṣūr:
	نصف (؟) وقية	one-half(?) *wuqīyah.*

(*b*) Illegible inscription in rectangular form (?) with يدى (?) in the center.

Pale blue-green. Stamp (*a*): 21 × 19 mm. (*b*): 16 × 11 mm. Piece, length: 41 mm., max. width: 35 mm. 12.13 grm.
PLATE VI

The word before *wuqīyah* is unfortunately quite obscure, but نصف is probably intended.

I have not been able to identify Isḥāq b. Manṣūr.

C. *Abū-Isḥāq*

113. *Uncertain weight.*

Complete ring-weight, considerably chipped on one side and on part of the top, bearing rectangular stamp about four-fifths preserved on the top surface:

[م]ما امر به الامير	[Of] what ordered the Amīr
ابو اسحق اعزه	Abū-Isḥaq, may strengthen him
الله على يدى عا	Allāh; at the hands of ʻĀ-
. . . س عبد (؟)	. . . . ?

Green. Stamp: 32 × 25 mm. Piece, length: 47 mm., width: 31 mm., height: 58 mm. 151.0 grm.
PLATE XI

It is strange to find an *amīr* issuing a stamp under his *kunyah* only. The Caliph al-Muʻtaṣim is a possibility, but unlikely in view of the fact that there are stamps of his bearing his full name. The name of the Prefect is too obscure for identification.

D. *ʻAbd al-Jabbār b. Nuṣayr*

114–115. *Fals* (*of 30 kharrūbah ?*).

على يدى عبد	At the hands of ʻAbd
الجبار بن نصير	al-Jabbār bin Nuṣayr:
مثقال فلس	weight of *fals*

خروبة ل | of *kharrūbah* (30?).

Two specimens. Pale green. 32 mm.; 32 mm. 5.80 grm.; 5.78 grm.
PLATE III

Similar to *Fouquet Coll.*, p. 383, Nos. 68–69 (5.80 grm.), and Petrie No. 143 (5.79 grm.). Petrie places this official about 132 A.H., but his argument is based on a mistaken identification with a name appearing on a stamp of 'Abd al-Malik b. Marwān (Petrie No. 142): the illustration shows that the name of 'Abd al-Jabbār b. Nuṣayr is not present on this piece.

The Prefect 'Abd al-Jabbār b. Nuṣayr is unidentified. The fact that the only reference in Caetani's *Onomasticon Arabicum* is to the published weights is sufficient evidence that his name is so far unrecorded in the literature.

CORPUS: *fals* (of 30) *kharrūbah*

E. *'Abd al-Raḥmān b. Maysarah*

116. *Great wuqīyah.*

Disk-weight. About three-fifths of an ovoid plano-convex disk, bearing two rectangular stamps, both fractured. Between, and at right angles, there is a third (deeper) impression, the right side of which is obscured by the second rectangular stamp.

(*a*) على يدى | At the hands
عبد الرحمن | of 'Abd al-Raḥman
بن ميسرة | bin Maysarah.
*

(*b*) على يدى | At the hands
عبد الرحم[ن] | of 'Abd al-Raḥma[n]
بن ميس[رة] | bin Maysa[rah].
*

(*c*)	[و]قية	[*Wu*]*qīyah*,
	كبير	great,
	[و]اف	[full] weight.

Green. Stamp (*a*): 19 mm. (*b*): 19 mm. (*c*): 17 × 10 mm. Piece, length: 64 mm., max. width: 34 mm., thickness: 12.5 mm. 27.00 grm.
PLATE VII

No. 116 is the only occurrence of the name of 'Abd al-Raḥmān b. Maysarah on a stamp or weight. There was an 'Abd al-Raḥmān b. Maysarah al-Haḍrami al-Miṣri, who died in 188 (803/4 A.D.),[46] but as I know nothing of the circumstances of his life, I can only mention the possible identification.

F. *'Abd al-Malik b. 'Īsā*

117. *Uncertain weight.*

Fractured ring-weight, bearing stamp on top surface:

على يدى	At the hands
عبد الملك	of 'Abd al-Malik
بن عيسى	bin 'Īsā.

Green. Stamp: 22 mm. Piece, length: 74 mm., width: 42 mm., height: 46 mm. 228.0 grm.
PLATE XI

The Prefect 'Abd al-Malik b. 'Īsā is unidentified; the above is the only occurrence of his name. He does not appear in Caetani's *Onomasticon Arabicum.*

G. *'Abd al-Wahāb b. al-'Atīq* (?)

118. *Uncertain measure.*

Vessel stamp attached to fragment of rim:

على يدى	At the hands
عبد الو	of 'Abd al-Wa-

[46] Caetani, *Onomasticon Arabicum*, II, p. 461.

هاب بن	hāb bin
العتيق (؟)	al-'Atīq (?).

Green. 28 mm.
PLATE XIV

'Abd al-Wahāb b. al-'Atīq (?) is unidentified. The last line is obscure and uncertain, and what has been transcribed as ع may be م or ف or ق. There is a *raṭl* weight (unillustrated) in the University College Collection, issued under Muḥammad b. Sa'īd by a Prefect whose name has been transcribed by Petrie as " 'Obeyd-el-Wahab ibn el Temym." Is this perhaps the same person as the above?

H. *'Ali b. Muḥammad (?)*

119. *One-quarter. . . . .*

Vessel stamp, about three-quarters preserved, attached to fragment of rim:

مما امر به	Of what ordered
[الام]ير على ا[بن؟] محم[د؟]	[the Am]īr 'Ali i[bn?] Muḥamma[d?],
[ا]طبعه ربا[ع]	the stamping of it, one-quart[er]
. . . . اف	[. . . . . . .full] measure.

Green. 36 mm.

The reading of the name Muḥammad is questionable; and while مما appears to be clear in the first line, one would not expect it with بطبعه, which also appears quite clear.

It is just possible that 'Ali b. Muḥammad (?) may be Abū-al-Ḥasan 'Ali b. Muḥammad b. al-Furāt, three times Vizier, 296–299, 304–306, 311–312 (908–912, 917–918, 923–924 A.D.).[47]

[47] Grohmann, *Corpus* I², p. 181.

CORPUS: uncertain weight (*BM*)
uncertain measure (¼)

I. *'Umar*

120–120(*a*). *Fals of 32 kharrūbah.*

Square stamp:

عمر	'Umar:
اثنين وثلثين	two and thirty
خروبة	*kharrūbah.*

Two specimens. Pale green. 32 mm.; 31 mm. 6.20 grm.; 6.17 grm.

Similar to *BM* Nos. 31–32 (misnumbered No. 30 on the plate) (6.22 grm.).

The stamps bearing the name of 'Umar are atypical in their lack of any executive phrase and the absence of title and full name. There was an 'Umar, probably a Finance Director, whose name appears on a papyrus and whom Grohmann has tentatively identified with a certain 'Umar b. Mihrān.[48]

CORPUS: *fals* (of 33 *kharrūbah* ?)=Petrie's "2 dirhams"
fals of 32 *kharrūbah*
fals of 30 *kharrūbah*

J. *Qutaybah*

121. *Uncertain measure.*

Vessel stamp:

على يدى	At the hands
قتيبة	of Qutaybah.

Green. 25 mm.
PLATE XIV

The name on No. 121 can be read in so many different ways that there is little possibility of positive identification.

[48] Grohmann, *Corpus* I², p. 226.

K. *Muḥammad b. . . . .*

122. *Uncertain measure.*

Vessel stamp attached to fragment of rim:

بسم الله [ا]	In the name of Allāh: [or]-
مر الامير	dered the Amīr
محمد بن ،	Muḥammad bin. . . . . . .
. . . . .هو	. . . .

Green. 36 mm.

123. *Two raṭls* (?).

Disk-weight. About one-third (?) of a circular or ovoid plano-convex disk, bearing a large central stamp, about two-thirds preserved, and traces of a smaller contiguous stamp.

بسم الله امر	In the name of Allāh: ordered
[الا]مير محمد	[the A]mīr Muḥammad
. . . . [ا]كرمه	[. . . . . .may] be generous to him
[الله . . . .] رطلين (؟)	[Allāh . . . .]: two *raṭls* (?),
[وا]ف	[full] weight.

Yellowish green. Stamp: 34 mm. Piece, max. di.: 67 mm., thickness: 21 mm. 85.0 grm.

L. *Al-Naḥli* (?)

124. *Dirham.*

Roughly rectangular stamp.

Obverse:

درهم	*Dirham*
كيل	weight.

Reverse: within circle

على يدى	At the hands
النحلى(؟)	of al-Naḥli (?).

Green. 23 mm. 2.92 grm.
Plate III

The obverse is similar to *BM* No. 51, which, however, has no reverse.

The reading of the name of No. 124 is entirely tentative. Al-Naḥl was a place near Bukhārā, and several persons with this *nisbah* are known.[49]

M. *Hilāl al-Jabbār* (?)

125. *Qisṭ* (?).

Small fragment of fractured ring-weight, bearing two rectangular stamps on the top surface, one complete, the other fragmentary:

(*a*) على يدى	At the hands
هلال	of Hilāl
الجبار (؟)	al-Jabbār (?).
(*b*)	. . . .
ق[سط ؟]	*q*[*isṭ ?*]
وا[ف]	full [weight].

Opaque yellowish green. Stamp (*a*): 21 × 17 mm. (*b*): 19 × 10 mm. Piece, length: 48 mm., width: 38 mm., height: 25 mm. 48.50 grm.

The reading "*qisṭ*" is very doubtful, especially as one would not expect the word on a weight of this type.

Hilāl (al-Jabbār ?) is unidentified.

N. *Yazīd*(?) *b. al-Idrīs* (?)

126. *Qisṭ* (?).

Vessel stamp:

[بسم اللّ]ه امر	[In the name of Allā]h: ordered
[الامير] يزيد (؟) بن ا	[the Amīr] Yazīd (?) bin a-
لادريس (؟)	l-Idrīs (?):

[49] Yāqūt, ed. Wüstenfeld, IV, p. 765.

قسط (؟) وا	*qisṭ* (?), full
[ف]	[measure].

Green. 27 mm.
PLATE XIV

The reading of the name of the Amīr Yazīd b. al-Idrīs is too doubtful to warrant attempt at identification.

O. . . . . *b. al-Ḥusayn*

127. *One-third dīnār.*

Obverse:

بسم	In the name
الله مثقال	of Allāh: weight
ثلث دينر	of one-third *dīnār*,
واف	full weight.

Reverse: margin

على يد . . . . بن (؟)	At the hand[s] of. . . . . bin (?)

center

الحسين	al-Ḥusayn.

Yellowish green. 19 mm. 1.41 grm.
PLATE III

P. . . . . *b. Sulaymān*

128. *Dīnār.*

Obverse: center within double circle, inner beaded

على يدى	At the hands
عبد الله	of 'Abdullāh
بن عرباض	bin 'Irbāḍ.

margin

مما امر به الامي[ر] . . . . [س]ليمن مثقل (*sic*) دينر واف Of what ordered the Amī[r] . . . Sulayman: weight of *dīnār*, full weight.

Reverse: within circle, off-center

على يدى	At the hands

عبد الله بن	of 'Abdullāh bin
عرباض	'Irbāḍ,
ا ﻪ	(may Allāh preserve him?).

Broken, about ¼ lacking. Pale yellowish green. 29 mm. 3.12 grm.
PLATE III

The Amīr on No. 128 may possibly be Muḥammad b. Sulaymān (see p. 125, above). The prefect is unknown to me.

Q. . . . . *b. Yazīd*

129. *Raṭl.*

Disk-weight. Fragment of circular or ovoid plano-convex disk, bearing two stamps, one about one-half preserved, the other about one-quarter preserved:

(*a*) الوفا لله	Honesty to Allāh:
[ولا] تنخسوا	["And] diminish [not]
[النّاس أشيآءهم]	[unto men any of their possessions"].
(*b*)	. . . .
. . . . . .	. . . .
[ب]ن يزيد . . .	. . . [bi]n Yazīd:
[ر]طل [و]	[*r*]*aṭl*, [full]
اف	weight.

Green. Stamp (*a*): 21 mm. (*b*): 22 mm. Piece, max. di.: 58 mm., thickness: 19 mm. 49.50 grm.
PLATE VII

The quotation is from the Qur'ān, Chap. XXVI, verse 183, being a continuation of that passsage (verse 181) which occurs quite frequently on weights (cf. No. 53, etc.). Between these two verses comes the apposite admonition: وزنوا بالقسطاس المستقيم, "Weigh with a just balance."

R. *The Caliph* . . . .

130. *Uncertain measure.*

Vessel stamp:

Center within circle:

امير	Commander
[المؤ]منين	[of the Be]lievers
. . . . . .	. . . .

Margin:

(؟) امر به	. . . . ordered . . . . . .

Pale green. 24 mm.

III. ANONYMOUS COIN WEIGHTS

131. *Dīnār.*

Center within double circle:

مثقال	Weight
دينر .·.	of *dīnār*,
واف	full weight.

Margin illegible.

Metropolitan Museum 08.256.20. Green. 28.5 mm. 4.23 grm.
PLATE III

Similar to *Fouquet Coll.*, p. 177, Nos. 7–8 (3.80 and 3.73 grm.), with margin effaced but bearing traces of a legend in which Casanova thought that he could recognize the phrase: . . . مما امر به.

132. *Dirham.*

بسم الله	In the name of Allāh:
وزن درهم	weight of *dirham*
كيل*	weight.
**	

Slightly chipped. Cobalt blue. 25 mm. 2.19 grm.
PLATE III

Cf. *BM* No. 51, with the simple inscription: درهم كيل.

133. *Fals.*

مثقال	Weight
فلس	of *fals*,
واف	full weight.

Pale green. 29 mm. 5.13 grm.

Similar to *BM* Nos. 40, 40G (5.83 and 5.76 grm.). To judge by the *BM* specimens the present specimen appears to be underweight. The higher weights would place the piece in the 30-*kharrūbah* category, and I have accordingly catalogued the specimen at this point in the inventory.

134–137. *Fals of 25 kharrūbah.*

فلس	*Fals*
خمس و	of five and
عشرين	twenty
خروبة	*kharrūbah.*

Four specimens. Pale green, green. No. 134: 31 mm., 5.16 grm. No. 135: Metropolitan Museum 89.2.242, 30.5 mm., 5.15 grm. No. 136: fragment, about one-half. No. 137: fragment, about two-fifths.
PLATE IV

Similar to *Fouquet Coll.*, p. 377, No. 13 (5.09 grm.); Petrie No. 171 (5.16 grm.).

138. *Fals of 25 qīrāṭ.*

مثقال فلس	Weight of *fals*,
واف وزن	full weight; weight
خمسة وعشر	of five and twen-
ين قيرط	ty *qīraṭ.*

Green. 31 mm. 4.91 grm.
PLATE IV

Similar to *BM* Nos. 41–42 (4.92 grm.); *Fouquet Coll.*, p. 377, No. 11.

139. *Fals of 24 qīrāṭ.*

وزن ار	Weight of f-
بعة وعشر	our and twen-
ين قيرطا (*sic*)	ty *qīraṭ*.

Pale blue-green. 28 mm. 4.75 grm.
PLATE IV

140. *Fals of 24 kharrūbah.*

بسم الله	In the name of Allāh:
مثقال فلس	weight of *fals*
[ا]ربع عر . . .	of [f]our (and twenty)
خروبة	*kharrūbah*.

Slightly chipped. Pale green. 29 mm. 4.20 grm.
PLATE IV

141. *Fals of 23 qīrāṭ.*
Within circle of dots:

بسم الله	In the name of Allāh:
مثقال الفلس	weight of the *fals*
ثلثة وعشرين	of three and twenty
قيراط	*qīrāṭ*.

Pale green. 29 mm. 4.17 grm.
PLATE IV

142–143. *Fals.*

مثقال	Weight
فلس	of *fals*.

Two specimens. Pale green. 29 mm.; 26 mm. 4.25 grm.; 3.54 grm. (worn).
PLATE IV

The normal weight appears to be roughly equivalent to 22 *kharrūbah*.

144–146. *Fals of 20 kharrūbah.*

فلس	*Fals*
عشرين	of twenty

خروبة *	*kharrūbah.*

Three specimens. 28 mm.; 28 mm.; 28 mm. 4.10 grm.; 4.10 grm.; No. 145 about one-third lacking.
PLATE IV

Similar to *BM* No. 44 (4.08 grm.).

147. *Fals.*

Retrograde (*sic*) مثقل	Weight
فلس	of *fals.*

Pale green. 27 mm. 3.95 grm.
PLATE IV

The weight appears to be roughly equivalent to 20 *kharrūbah.*

148. *Fals of 18 qīrāṭ.*

Within circle of dots:

بسم الله	In the name of Allāh:
مثقال فلس	weight of *fals,*
واف وزن	full weight; weight
ثمنية عشر	of eighteen
قيرط	*qīraṭ.*

Faint traces suggesting legend on reverse.

Pale green. 28 mm. 3.51 grm.
PLATE IV

Similar to *Fouquet Coll.*, p. 377, No. 10, with traces of inscription on the reverse (?) (3.55 grm.).

149. *Fals of 17 kharrūbah.*

[بسم ا]لله	[In the name of A]llāh:
. . . . ال (؟)الفلر ـ (*sic*)	[weight ?] of *fals*
. . . بعة (؟) عشر	of seventeen (?)
خروبة (؟)	*kharrūbah* (?).

Opaque, deep claret. 25 mm. 3.40 grm.

150. *Fals of 9 qīrāṭ.*

مثقال*	Weight
نصف فلس	of half *fals* of
وزن ۞ تسعة (*sic*)	weight of nine
قرريطن* (*sic?*)	*qrarīṭ.*

Pale green. 22.5 mm. 1.77 grm.
PLATE IV

Similar to *BM* Nos. 55, 55G (transcribed قرريط, although it is apparent in the illustration that there is a final letter (ن ؟), as in the present specimen).

151. *Fals of 9 qīrāṭ (?).*

مثقال (؟)	Weight (?)
فلس تع (؟)	of *fals* of nine (?)
ق	*q*[*īraṭ* ?].

Opaque, black. 15 mm. 1.34 grm. (worn).

IV. HEAVY WEIGHTS— ANONYMOUS OR NAMES EFFACED

152. *One-half great (?) raṭl.*

Fractured ring-weight bearing stamp on top surface:

نصف	One-half
رطل ك[بير ؟]	*raṭl* g[reat?],
واف . . .	full weight. . . .

Opaque, green. Stamp: 23 mm. Piece, length: 41 mm., width: 35 mm., height: 50 mm. 112.50 grm.

Cf. *Fouquet Coll.*, p. 388, No. 23, with a similar inscription.

153. *One-quarter raṭl.*

Fractured ring-weight, about two-thirds complete, bearing stamp on top surface:

ربع	One-quarter
رطل	*raṭl.*

Opaque, striated red, brown and black. Stamp: 18 × 17 mm. Piece, length: 39 mm., width: 25 mm., height: 49 mm. 56.0 grm.
PLATE XI

The name of the official, if any, must have been on the bottom of the weight.

154. *Uncertain weight.*

Complete ring-weight, somewhat chipped and worn, bearing a large rectangular stamp, completely effaced, on the top surface, and a small rectangular stamp on one side:

. . . بابو (؟)	. . . .?
. . . فو (؟)	. . . .?

Opaque, green with white and iridescent oxide. Stamp: 15 × 13 mm. Piece, length: 45 mm., width: 41 mm., height: 50 mm. 162.50 grm.

155–174. *Various weights.*

Twenty ring-weights, each with one or more stamps effaced or illegible, of which the following are complete except for chipping and wear:

155. 346.0 grms.
156. 177.5 grms.
157. 165.0 grms.
158. 157.5 grms. (badly worn and deteriorated)
159. 94.5 grms. (badly worn and deteriorated)
160. 86.5 grms. (badly worn and deteriorated)
161. 83.5 grms. (badly worn and deteriorated)
162. 83.5 grms. (badly worn and deteriorated)
163. 81.5 grms. (badly chipped)
164. 79.0 grms. (deteriorated)

175. *One-half wuqīyah.*

Disk-weight. Within square:

نصف	One-half
وقية	*wuqīyah.*

Slightly deteriorated. Pale green. 36 mm. 13.82 grm.

Similar to *BM* No. 35 (15.81 grm.). Cf. Marcel Jungfleisch, "Poids Fatimites en verre polychrome," in *Bulletin de l'Institut d'Égypte*, X, Session 1927–1928, Cairo, 1929, pp. 20–21.

V. VESSEL STAMPS—ANONYMOUS

176–178. *One-half of one-quarter qisṭ.*

Vessel stamp, two specimens of which attached to fragments of rim:

نصف	One-half
ربع	of one-quarter
القسط	*qisṭ.*

Three specimens. Yellowish green, green. 27 mm.; 29 mm.; 26 mm.

PLATE XIV

Cf. *Fouquet Coll.*, p. 364, No. 36, with قسط instead of القسط although the photograph shows that the definite article might have been present on the stamp.

179. *Measure of red lentils.*

Vessel stamp attached to fragment of rim:

مكيـ[لة]	Meas[ure]
عدس احمر	of red lentils.

Green. 32 mm.

PLATE XIV

Similar to *Fouquet Coll.*, p. 364, Nos. 62–64.

180. *Measure of white sesame seeds.*

Vessel stamp:

مكيلة	Measure
جلجلان ابيض	of white sesame seeds.

Green. 28 mm.

PLATE XIV

Similar to *Fouquet Coll.*, p. 364, Nos. 53–56.

181. *Measure of red sesame seeds.*

Vessel stamp:

مكيلة	Measure
جلجلان احمر	of red sesame seeds.

Green. 30 mm.
PLATE XIV

Similar to Petrie No. 222.

182. *Measure of lupins.*

Vessel stamp:

مكيـ[ـلة]	Meas[ure]
ترمـ[ـس]	of lupi[n].

Pale green. 25 mm.

Cf. *Fouquet Coll.*, p. 365, No. 78, with star only beneath.

183. *Measure of coriander seeds (?).*

Vessel stamp:

[م]كيـ[ـلة]	[Me]as[ure]
. . . ب الكـ . . .	of . . . .

Yellowish green. 23 mm.

Possibly the missing letters of the second line are to be reconstructed as حب الكسبر, as suggested by Casanova in *Fouquet Coll.*, p. 369, No. 131.

184–185. *Qisṭ of* . . . .

Vessel stamp:

قسط	*Qisṭ*
(؟)	of . . . .?

Two specimens. Green; yellowish green. 21 mm.; 22 mm.

186. *Quarter-qisṭ of* . . . .

Vessel stamp:

[ر]بع قسط	One-quarter *qisṭ*

ص	Ṣ
. . . . ـ	. . . .
. . . . . .	. . . .

Pale green, iridescent. 26 mm.

187–188. *No measure.*

Vessel stamp, both specimens attached to fragments of rim:

الوفا	Honesty
لله	to Allāh.

Two specimens. Pale green. 19 mm.; 21 mm.
PLATE XIV

189–190. *No measure.*

Vessel stamp, one specimen of which attached to fragment of rim:

الو	Hon-
فا لله	esty to Allāh.

Two specimens. Pale green. 24 mm.; 18 mm.

Cf. *Fouquet Coll.*, p. 363, Nos. 16–23.

VI. VESSEL STAMPS—ILLEGIBLE

191–205. *Uncertain measures.*

Fifteen vessel stamps, some attached to fragments of rim, with legends completely effaced or illegible.

VII. PRIVATE WEIGHTS AND STAMPS

A. ʻ*Abd al-Ḥamīd*

206. *Uncertain measure.*

Vessel stamp:

Center, within square

عبد	ʻAbd

الحميد	al-Ḥamīd

At sides

. . . . حلم و	. . . . . ḤLM W . . . .

Green. 28 mm.
PLATE XIV

B. *'Uthmān*

207. *Uncertain measure.*
Vessel stamp:

امر عثمن	Ordered 'Uthman
. . . . . .	. . . .
. . . . . فلىر ر،	. . . . ?

Green. 26 mm.

C. *'Umar b. Junādah* (?)

208. *Coin-weight* (?).

عمر	'Umar
بن جناد	bin Junāda-
ة ✱	h (?).

Pale blue-green. 23 mm. 3.16 grm.
PLATE IV

Cf. the same father's name on Nos. 209 and 210 below.

D. *'Īsā b. Junādah* (?).

209. *Coin-weight* (?).
Within beaded border:

عيسى	'Īsā
بن جناد (؟)	bin Junādah (?).
✱ ة	

Pale blue-green. 25 mm. 2.85 grm.
PLATE IV

Cf. the identical legend on No. 210 below. What I have hesitantly transcribed as ة at the end may rather be an ornament.

210. *Uncertain weight.*

Complete ring-weight, with chipped edges, bearing stamp on top surface:

عيسى	'Īsā
بن جناد (؟)	bin Junādah (?).
✱ة	

Opaque, mottled brown. Stamp: 23 mm. Piece, length: 37 mm., width: 26 mm., height: 42 mm. 73.25 grm.

Cf. No. 209, above.

The sides of the hole in the center of the weight show clearly the wear of the rope or chain by which the weight was suspended.

VIII. ANONYMOUS AMULETS

The following pieces resemble coin weights, but the weights, apparently conforming to no standard, can be of no significance.

211–212.

بسم	In the name
الله	of Allāh.

Two specimens. Pale blue-green. 26 mm.; 22 mm.

213.

بسم	In the name
الله	of Allāh:
ربى	my Lord
الله	is Allāh.

Pale green. 27 mm.

214.

الو	Hon-
فا لله	esty to Allāh.

Pale blue-green. 23 mm.

215–217.

بسم	In the name
الله ام[ر]	of Allāh: command[ed]
محمد بالو	Muḥammad hon-
فا لله	esty to Allāh.

Three specimens. Pale green; yellowish green. 25 mm.; 23 mm.; 24 mm.
PLATE IV

Cf. *Fouquet Coll.*, p. 381, No. 44.

218.

حلم	Forbearance (?)
عليه	to him,
الامير	the Amīr.

Irregular disk with stamp deeply sunken. Yellowish green. 29 mm.
PLATE IV

219.

بسم الله	In the name of Allāh:
يعبد الله	worships Allāh,
الامير	the Amīr.

Yellowish green. 27 mm.

220. Five lines of retrograde and apparently meaningless inscription.

عمه (؟)
بم له الاه
بالمس . . . .
كال ا . . . .
الك به (؟)

Yellowish green. 26 mm.
PLATE IV

KEY TO ABBREVIATIONS OF FREQUENTLY CITED WORKS

ONLY those works which are frequently cited are listed here. As noted on p. 4, the most complete bibliography on glass weights is to be found in J. Walker's article *sanadjāt* in the *Encyclopaedia of Islām*.

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4. Edward T. Newell. *The Coinage of the Western Seleucid Mints from Seleucus I to Antiochus III.* 1941. 450 pp. 86 pls. $10.00.
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NUMISMATIC NOTES AND MONOGRAPHS

No. 112

"BARBAROUS RADIATES"

Imitations of Third-Century Roman Coins

By PHILIP V. HILL

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET, NEW YORK
1949

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PHILIP V. HILL

British Museum, London
September 22, 1948

"BARBAROUS RADIATES"

IMITATIONS OF THIRD-CENTURY ROMAN COINS

GENERAL CHARACTERISTICS

HOARDS and site-finds from Britain and the Continent frequently contain pieces which cannot possibly be said to have emanated from any official Roman Imperial mint. Of these copies some are very close to their prototypes, others only just recognizable, while others again are of an extreme barbarity. Until comparatively recent years such pieces, whenever they have turned up in excavations, have been labelled simply "barbarous" and thrown aside as useless for the purpose of dating hoards and sites. Careful study of them, however, has convinced me that they can be put to a very definite use, if only they can be classified correctly in some sort of chronological sequence. Unfortunately the task is made heavier by the neglect and lack of interest shown by excavators in the past, but we may still hope that a close study of hoards will throw considerable light upon our researches, although it must be borne in mind that we have only just begun to touch the fringe of the subject.

A striking example of the importance of barbarous imitations in dating a hoard came to my notice only recently in the case of that from Redenhall, Norfolk.[1] The fact that the latest orthodox coin was an Æ4 of Honorius with "Victoria Auggg." reverse would at first sight date this hoard to the late fourth or early fifth century, probably about the time of the Roman "Withdrawal." Nor would its barbarous copies, with one exception, postulate a later date, since imitated Theodosian Æ4 were completely absent. (This, however, is not a serious omission, as such copies are very rare in Britain, though common enough on the Continent.) The exception is an interesting coin in more ways than one: it is a minimus, .35 inches in diameter and in fine con-

[1] Although discovered over fifty years ago, this hoard has only just been published in *Num. Chron.*, 1946, pp. 157–159.

dition, copied from a fifth-century coin with *Chi-Rho* reverse, and with an obverse head the style of which resembles very closely that of the early Saxon sceattas [PLATE I, 1]. This fact, together with the lateness of its prototypes, which is itself post-Theodosian, indicates that the copy is very much later still in date. The only conclusion to which we can come, therefore, is that the hoard must have been buried at some time during the latter half of the fifth century at least.

By whom and why were barbarous imitations made? In the first place, they were the products of unofficial moneyers, working either individually or in groups at irregular mints scattered throughout the Empire. It is indeed probable that the authorities, while officially frowning upon such irregularities, would be led to tolerate them, if only because in course of time they came to be in constant and popular use through providing a very necessary supply of small change—a commodity in which the orthodox Roman issues were usually sadly lacking. Secondly, they were struck both by tribes bordering on the Empire who wanted coins for their own use and by tribes within the imperial boundaries, probably for the express purpose of supplementing the issues of the official mints, especially in times of political danger and economic insecurity. Lastly, it seems that on rare occasions an official at a regular mint would try his hand at the business, since pieces exist which are not quite orthodox in style, although presenting every detail with somewhat suspicious exactitude: nevertheless, they are betrayed by their curious irregular lettering and the long, pointed nose and staring eye of the "semi-barbarous" or "slightly irregular" portraiture[2] [PLATE I, 2].

[2] The elevation of a pretender to the purple provided an exceptional reason for the striking of barbarous imitations, but if we exclude Carausius, whose case is somewhat different, the only example so far known is that of Bonosus, usurper in Rhaetia *c.* A.D. 280. There are also one or two very doubtful coins attributed to the usurpers Aureolus and Amandus, but these, together with the barbarous gold piece which has been given to Odenathus (*Rev. Num.*, 1846, p. 278; Cohen, 2nd ed., VI, p. 212), must necessarily be treated with considerable reserve. A coin which, from the obverse legend, seems to have been copied from a piece of Vaballathus is in my own collection: it has a Hilaritas reverse.

The makers of barbarous imitations employed numerous methods of flan manufacture, some of them most ingenious. Most common of all were the true or "prepared" flans, which were produced in various ways: by flattening hot globules of metal [PLATE I, 3]; by overstriking complete coins, orthodox or barbarous, without first erasing the original types [PLATE I, 4]; by filing away the types of regular coins (usually Æ3) [PLATE I, 5] or by cutting them into quarters [PLATE I, 6] or roughly rounded fragments prior to restriking with the new types; and by hammering out and cutting up coins of still larger module, again prior to restriking [PLATE I, 7]. In connexion with the last-named process we shall see later that orichalcum coins of the Early Empire appear to have been subjected to this treatment in many cases, probably during the period of metal scarcity. Also in post-Roman days, when metal became increasingly difficult to obtain, the method of making a flan by clipping it with shears from a very thin sheet of metal [PLATE I, 8] was frequently employed. Such flans have sharp angles and edges and often possess a "tail" where the shears have gone astray in the cutting; otherwise they are tolerably neat. Another method was to cut flans from drawn-out rods of metal, but of course only the very small pieces known as "minimissimi" would have been produced in this way [PLATE I, 9]. They are naturally perfectly round, but they often exhibit signs of weakness in the centre, the result of the tensile strain which was placed upon the rod as it was being drawn out. Occasionally barbarous copies were not struck but cast [PLATE I, 10]: such pieces can easily be recognized by the "tail" which usually develops in the process or by the "bevelled" appearance of the edge, as well as by pit-marks if they were cast in a sand-mould. Towards the end of the fourth century, when metal was beginning to become scarce, a tendency arose to re-use earlier (mainly third-century) coins, either orthodox or barbarous, clipped to Æ4 size [PLATE I, 11]—the normal module of the regular coinage at this time—and the same tendency is

noticeable at a later date when clipped siliquae passed current[3] [Plate I, 12].

Although there are so many varieties of barbarous copies and although actual die-identities are very infrequently discovered, a study of hoards and site-finds reveals the existence of regional "schools of art," each with its own stylistic peculiarities and idiosyncrasies. It is far more than a general vague resemblance between coins from the same locality: it is a definite affinity in the treatment of both obverse and reverse, almost as if the coins came from the same workshop or even from the same hand. To take but two examples, from north and south Britain respectively, Corstopitum (Corbridge, Northumberland) has yielded no fewer than seven such instances of stylistic affinity and Verulamium (St. Albans, Herts.) has yielded at least two. More general resemblances are also apparent in coins from the same district. In the north, especially Corstopitum, the tendency seems to be towards "lined-in" figures without relief [Plate I, 13], while southern sites produce coins with bolder and more "solid" figures in high relief [Plate I, 14]. From the north also we very often find examples of a herring-bone pattern decorating the reverse figures, while both obverse and reverse designs are in a circle composed of one thin line crossed by short lines at right angles to it ( ) [Plate I, 15] or of a thin line with the shorter lines on one side only ( ). The exergual line, if there is one, is decorated in the same way. M. Blanchet has also noticed the existence of regional "schools of art" on the Continent.[4] Their presence, both in this country and abroad, suggests an ordered discipline in the manufacture of imitations rather than haphazard attempts, although of course this does not necessarily mean that private workshops could not have been set up by individuals as well.

[3] Is the clipped siliqua the "denarius" of which Gildas speaks in his *De Excidio Britanniae* (*c.* 546 A.D.)?

[4] *Rev. Num.* 1940, pp. 79–80.

The evidence for these unofficial mints is so plentiful that we may accept their existence as fairly certain. Die-identities from various sites in this country and abroad are the surest indications of an unofficial mint—and, moreover, of one which is in the vicinity of the site where the coins were found. We might also suppose, with some reason, that the existence of the regional styles of "art" noted above could suggest the existence of irregular mints, as could also the evidence of individual coins. A few examples may be given to illustrate our point. The first is a barbarous "Fel. Temp." from Lydney Park, Glos., with the mintmark $\overline{\text{COL}\cdot}$, and Mr. J. W. E. Pearce has suggested that it may have emanated from the nearby *colonia* of Glevum (Gloucester), which, therefore, may have been the site of an unofficial mint. A similar piece with PLN in the exergue (provenance: Maiden Castle, Dorset) seems to have been struck at London, but, since the London mint had been closed for over twenty years before the introduction of the "Fel. Temp." series, the only possible explanation of this extraordinary mintmark is that there was an unofficial mint striking barbarous pieces at London. Another "Fel. Temp.," this time in my own collection, also appears to bear the mark of London (·PLN·) [Plate II, 1]. The presence in hoards and site-finds of thin blanks—flans of earlier coins carefully filed down ready for restriking—may indicate with greater certainty a nearby place of production of barbarous copies. Site-finds from Corbridge and Colchester have yielded such pieces and the ten blanks (six clipped from thin sheet-metal and four cut from a rod) in the Kiddington, Oxon., hoard, which was buried *c.* 420–430, a decade or two after the "Withdrawal," may tend to the same conclusion. The most definite evidence, however, has come from the continent, where at Autun and Éprave the actual workshops themselves have been unearthed. These will, however, be discussed in a later context.

Legends on barbarous imitations range from correct and intelligent copies to a hopeless jumble of meaningless letters or

even mere lines and dots. Minimi (small pieces of between .50 and .10 inches in diameter) are usually anepigraphic, doubtless owing to the extremely small size of the dies employed. Interesting varieties of legends often occur. There are those which, although accurate or reasonably so, bear no relation whatever to the types which they purport to describe. A barbarous Tetricus I—of a fine, virile style, certainly better than that of any orthodox piece of the reign—in my collection has the reverse legend HER DEV . . . . . . SI (from the "Herc. Deusoniensi" coins of Postumus with Hercules reverse) combined with the type of Sol [Plate II, 2]. The figure of Fortuna may be found with the legend of Salus [Plate II, 3], Spes with that of Pietas or a Genius described as Virtus. From time to time we come across pieces which are of (apparently) perfectly orthodox style but which have hopelessly blundered reverse legends. The reason for this is quite obscure, unless they were the products of workmen attached to official mints who intentionally blundered the reverse legends [Plate II, 4], for it is inconceivable that any die-sinker who was intelligent enough to master the intricacies of both obverse legend and reverse type and to engrave an excellent portrait should have failed so completely to produce an intelligible reverse legend.

Anyone who studies barbarous imitations at all closely is struck by one very remarkable fact which is especially noticeable in the more degraded and illiterate specimens. It is a tendency towards emphasis upon one particular attribute or part of the design, often to the complete exclusion of others. In the case of Claudian copies it is usually the shield of the Minerva reverse which receives this emphasis [Plate II, 5]. With barbarous radiates it is the radiate crown on the obverse (which always remains even after the rest of the type has entirely disintegrated, *cf.* Plate II, 6) or a part of the reverse figure—the left arm of Pax encircling the sceptre, the skirt-folds of Spes or her body

which often develops into a fiddleshape, the left arm and whip of Sol, the double curve of the arms of Pietas or the palm of Hilaritas [Plate II, 6, *rev.*]. In fourth-century copies the emphasis is placed upon such parts of the design as the top of the standard in the "Gloria Exercitus" type, the horse [Plate II, 7], the legionary or the spear of the "Fel. Temp. Reparatio," the wreath of Victory in the "Victoria Auggg." type and the captive in the "Salus Reipublicae" type. Similarly, one particular letter, such as the X in PAX, the V in FORTVNA or AVG, or the E in FELICITAS [Plate II, 8], may be large and pronounced or even survive after the remainder of the legend has sunk into the depths of barbarity or has disappeared entirely. The only explanation of these phenomena is that those letters and attributes which were emphasized were the ones which especially struck the engraver's imagination and which seemed to him the most important parts of the composition.

Another characteristic—one which seems to be confined to "barbarous radiates"—is the absorption of one type into another. The most common instance of this is the assumption of the sceptre of Pax by a type which normally does not possess this attribute. This confusion of types is especially frequent in coins of extremely degraded style and may be explained by the facts that the engraver had in mind the attribute of another, more common, type (such as Pax) while he was working on his die. Indeed it is to be noted that the types whose attributes have been absorbed into other types are usually those, like Pax, Spes, Pietas and Sol [Plate II, 9], which are the most common in imitation.

So much, then, for the general characteristics of barbarous copies. The subject of our present study is, however, but one section, although a large and important one, of a far more vast and intricate field. It is that class of copies which bear a radiate head on the obverse and a figure (usually a diety or a personifica-

tion of an abstract idea) on the reverse and which are placed under the generic heading of "barbarous radiates." Their prototypes were the debased antoniniani of the late third century, those struck by the Gallic Emperors (259–273) being most commonly imitated. Heading the frequency-list of imitations are those taken from the coins of the Tetrici (270–273) [PLATE II, 10, 11] with, second, those from the posthumous issues of Claudius II (270) [PLATE II, 12], usually with the Altar reverse, and, third, those from the coins of Victorinus (268–270) [PLATE II, 13]. Imitations of Postumus [PLATE II, 14] are uncommon and those of Gallienus [PLATE II, 15], Quintillus [PLATE II, 16] and Probus [PLATE II, 17] are rare, while only a few odd examples exist of Aurelian [PLATE II, 18], Tacitus [PLATE II, 19] and Numerian. There is also only one recorded instance of a female head on a barbarous third-century coin: its provenance was Caister St. Edmund, Norfolk.[5] Nevertheless, there is a coin (provenance unknown) in the Ashmolean Museum, Oxford, which undoubtedly shows a female head on the obverse. It has: *obv.* M . . . . V, bust of Empress (Magnia Urbica?), draped, r.; *rev.* legend uncertain: female figure standing l., Æ .35 [PLATE II, 20].

CLASSIFICATION OF BARBAROUS RADIATES

To find a suitable method for the classification of barbarous radiates is not easy. We cannot divide them, according to their prototypes, into moneyers or reigns, as is possible with the copies of Republican denarii or of Imperial coins of the preceding three centuries, owing to the vast quantities of unassignable coins, which are either anepigraphic or whose obverse legend bears no resemblance to an emperor's name and titles. The usual method, that of classification by reverse types, is, if less scientific, at least more utilitarian. A natural starting-point is the division of the types into animate and inanimate: the former may further

[5] Sutherland: *Coinage and Currency in Roman Britain*, p. 126; Pl. IV, 6.

be subdivided into male figures, female figures, birds, animals and the inevitable miscellanea; the latter into altars, sacrificial implements, abstract designs, dismembered types and miscellanea. It goes without saying that numerous unclassified *incerta* must be added to both subdivisions.

The male types so far noticed are: Aesculapius, Cabirus (?), Caesar, Emperor, Genius, Hercules, Jupiter, Mars and Sol. Of these the Sol type is undoubtedly the commonest, probably on account of its virility and action, which made it popular among the semi-Romanized communities who struck these pieces [*cf.* PLATE II, 2].

Among the imitations, as among the official issues, female types are far more numerous than male. They are: Abundantia, Aequitas, Annona, Concordia, Dacia, Diana (?), Felicitas, Fertilitas, Fides, Fortuna, Hilaritas, Indulgentia, Juno, Justitia, Laetitia, Liberalitas, Libertas, Minerva, Moneta, Nemesis, Nobilitas, Pax, Pietas, Providentia, Roma, Salus, Securitas, Spes, Tutela, Uberitas, Venus, Victory and Virtus. Pax is the commonest of these types, followed closely by Spes [PLATE II, 9]. Fides, Fortuna, Hilaritas, Salus and Virtus are by no means scarce, but the remainder varies from scarce to extremely rare. Not all the varieties of the same reverse type are of the same frequency, however. For example, Pax holding a transverse sceptre is rare; Pax holding a cornucopiae is very rare; while Pax holding a vertical sceptre is extremely common. The frequency depends largely upon two factors—the availability of the prototype for copying and the ability of the engraver to render the design reasonably accurately. In the example quoted above, the cornucopiae and transverse sceptre of the two scarcer varieties of Pax would often be rendered so badly in imitation [PLATE III, 1], owing to their being "weaker" attributes than the vertical sceptre, with a consequent difficulty in their interpretation, that the whole type would soon cease altogether to be copied.

Apart from these reverses, which can definitely be traced to a

Roman original, there are very many others, with both male and female figures, whose attribution is quite uncertain, either because an essential part of the design is off the flan, or because the type has become so barbarized as to make it unrecognizable [PLATE III, 2], or because the die sinker has used his imagination to such an extent as to create an entirely new type.

Of the remaining reverses the sole representative of the "bird" section is the eagle of the posthumous issues of Claudius II, which, however, was fairly frequently copied. The next subdivision, that of animals, is rare: its examples are mainly taken from the legionary series of Gallienus, Postumus and Victorinus and consist of a centaur, a doe, a goat, a griffin, a Pegasus, a stag and a wolf. There are also certain horse and dog types, which were probably native in origin, as no prototype can be found for them in the official Roman series; in fact, a very good case for the derivation of the horse type from Ancient British coins has recently been stated.[6] Among the miscellanea are: an uncertain standing figure (of which numerous examples exist) and certain rare types with two (or three) figures, a seated figure, an equestrian figure [PLATE III, 3] and a radiate head repeated on the reverse [PLATE III, 4].

The commonest inanimate type is undoubtedly that of the Altar from the posthumous issues of Claudius II, although the Sacrificial Implements type, mainly of Tetricus II, was also very popular, perhaps owing to its adaptability to stylization. The miscellanea are: a winged caduceus, crossed cornucopiae, a galley, clasped hands, letters, a temple, a trophy and captives and coins with merely a blank reverse. Abstract designs occasionally occur, but these were solely the products of the engraver's imagination and could not possibly have been derived from any Roman prototype. The large class of coins with dismembered reverses must have owed its origin to the imitation of worn or

[6] By my friend, Mr. Gilbert Askew, F.S.A. (to whom I am indebted for many useful suggestions in connexion with barbarous copies), in *Num. Chron.*, 1943, pp. 104–105.

badly struck originals; some of these bear indications of having been copied from animate figures, although on most of them the type has so completely disintegrated as to be composed of little more than a few lines and dots [Plate III, 5].

As with other imitations, barbarous radiates may be divided stylistically into three grades,[7] the order of degradation being determined by a study of the closeness to the original of the obverse portrait and the attributes and posture of the reverse figure. One finds that eventually persistent and successive copying of the same type leads to complete stylization of the reverse, some types, such as Sol, Spes and the Sacrificial Implements, lending themselves to stylization more readily than others.

Grade I is accurate, or reasonably so, with a fair likeness in the obverse portrait and a correct representation of the details of the reverse figure: legends are usually intelligible with good lettering, and coins of this grade are obviously the work of competent craftsmen with a knowledge of Latin as well as of their craft [Plate III, 6, 7]. In Grade II the standard of workmanship has fallen off quite considerably [Plate III, 8, 9]. The head or bust on the obverse is no longer a portrait, one at least of the attributes of the reverse figure is missing (sometimes both have disappeared) and the posture of the figure becomes stiff and unnatural. Legends tend to become more and more blundered until they are almost unintelligible: some large-size copies are even anepigraphic.[8] Grade III reaches the lowest stage of barbarity [Plate III, 10, 11]. Often its coins have types which, on both obverse and reverse, are breaking up or have completely disintegrated: if not, stylization is the rule. Legends (if present at all) are totally blundered with, sometimes, "letters" which

[7] See *Num. Notes & Mons.* No. 65 for Sutherland's grading of Claudian copies. Radiates may be graded on much the same lines, except that we are omitting his fourth grade—coins with obverse and/or reverse type reversed—since the results would not justify the work involved.

[8] Minimi exist in all three grades and, owing to the smallness of the flans, many minimi of even Grade I have one or both legends missing.

can have existed in no conceivable alphabet but only in the mind of the engraver. The most degraded specimens of this grade are those coins with merely a suggestion of a radiate crown on the obverse and a succession of lines and dots to do duty as a reverse type [*cf.* PLATE III, 5].

Appendices to this monograph give lists of (*A*) British hoards, (*B*) British sites and (*C*) foreign hoards which have yielded radiate copies. Although Appendices (*A*) and (*B*) are by no means exhaustive, they will at least be sufficiently representative to present a general picture of the distribution in this country of such imitations. Two facts emerge: firstly, that they circulated very widely and, secondly, that they were in use from the third to the fifth centuries, and even later. We shall see presently that this continuity of circulation implies a continuity of manufacture, which vitiates the natural assumption that radiate copies were contemporary with their prototypes and can *all* be classed together in the third century.

A further division of barbarous radiates, this time on a basis of module, may be made. Needless to say, no definite line can be drawn between the larger copies and the minimi, but it will be convenient to take it to be .50 inches or 12.5 mm., all coins of this diameter and less being classed as minimi. At the bottom of the scale are the tiny pieces ranging from .30 to .10 inches which are now universally (though ungrammatically!) known as "minimissimi." These ridiculously small coins, of the smallest of which it takes as many as fifty to cover an English halfpenny, can only have been struck and passed current in days of extreme poverty after the whole economic structure of the country had collapsed. Such a state of affairs must have applied during the period of metal scarcity (*c.* A.D. 450–550?) long after the Roman "Withdrawal" and indeed the extreme barbarity of these minimissimi certainly suggests a Britain which had "gone native."

HOARD EVIDENCE FOR DATING BARBAROUS COPIES

It is obvious that a close study of hoards will provide evidence for dating barbarous copies. Certain hoards,[9] which must have been buried in the early seventies of the third century, probably during the economic crisis precipitated by the unpopular reform of Aurelian, prove beyond question that barbarous radiates were circulating side by side with their prototypes. From the contents of these hoards it may be stated that all Grade I copies of good module, together with many of Grade II, were contemporary imitations. The burial of other hoards,[10] containing large-size radiate copies interspersed with regular coins to Carausius or Allectus, may be dated to the last decade of the third century (some, perhaps, having been buried during the troubles accompanying the fall of Allectus in 296), thus indicating that barbarous radiates of this size were circulating and probably being manufactured, down to *c.* 300. Others[11] show that they were current, albeit in diminished numbers, if not actually being struck, well into the fourth and fifth centuries.

We may be fairly certain, therefore, that all Grade I and some Grade II copies are contemporary, or nearly so, with their prototypes and even certain large-size Grade III imitations give the impression of being early in date, having been taken from worn or badly struck originals or representing perhaps the work of illiterate craftsmen. Radiate minimi, on the other hand, present a problem which is at once difficult and fascinating: yet here again a study of hoards will at least simplify it even if it does not solve it completely.

The Brougham, Great Chesters and Segontium II and III

[9] Allington, Blackmoor II, Caister St. Edmund, Emneth I and II, Great Chesterford, Ham Hill, Linwood, Long Wittenham, Netley Abbey, Poole, Upton, Verulamium III and Wimblington.

[10] Blackmoor I, Clapton-in-Gordano, Coleford (Park End), Everton and Verulamium I and II.

[11] Bermondsey, Colchester, Cranfield, Icklingham IV, Redenhall, Wiveliscombe II, Woodbridge, Woodeaton and Worlebury Camp.

hoards all must have been buried towards the end of the third century. In them regular coins, mainly of the Gallic Empire, but also sometimes of the British Empire of Carausius and Allectus (287–296), were found associated with radiate minimi. Decisive for date, however, was the Verulamium Theatre hoard which was composed entirely of radiate minimi. This is such an important hoard for our purposes that it will repay us to examine it more closely.

The hoard, which came to light in 1934 and which has been published in full in the *Numismatic Chronicle* for 1937, was composed of the following pieces, grouped according to size:

80	large-size barbarous radiates (at least), undoubtedly contemporary with their prototypes.
86	ranging from 7 to 8 mm. in diameter.
486	ranging from 5 to 7 mm. in diameter.
44	ranging from 4.5 to 5 mm. in diameter.
696	total.

In addition there were numerous fragmentary coins and scraps, making a total of about eight hundred pieces, all barbarous imitations. The find-spot was 9 inches below the theatre stage, almost exactly on its central line, and 18 inches from the inner wall of the curtain-slot. Incontrovertible archaeological evidence showed that the reconstruction of the theatre, which included the building of a new stage, could not have taken place after *c.* 300 A.D. The cement of which this new stage had been constructed was completely intact, without even a crack, so that it formed an effective seal between the layer of third century material below it and the layer of fourth century material above. The latter contained numerous coins of fourth century date which were completely lacking in the former. If the hoard had been deposited later than *c.* 300, it could not possibly have found its way to the below-stage layer: such a possibility is immediately negatived by the perfect condition of the cement. It must, therefore, have been buried before the reconstruction of the theatre

in *c.* 300. Moreover, in the orchestra of the theatre there were found minimi of hoard-type associated with coins of Carausius: thus the evidence for the hoard's late third-century date is complete.

It would appear fairly certain, then, that radiate minimi were being produced before the end of the third century, contrary to the former beliefs of British numismatists who were inclined—although quite logically—to assign all minimi to a date after the Roman "Withdrawal." The Verulamium Theatre hoard is definite proof of the fallaciousness of such a theory and since its discovery we have had to reorient our ideas very radically. This is not to say that radiate minimi were not produced later: as we shall see, we have convincing evidence that they were struck contemporaneously with the tiny pieces derived from the fourth-century "Fel. Temp." reverse which may very definitely be assigned to the period of copper scarcity. Nevertheless, there are certain strong stylistic differences between the early and the late minimi [*cf.* Plate III, 7 and 11]. The former are usually of good, neat style and excellent technique, although struck on flans which are in most cases too small for the dies: the obverse head, though no portrait, is generally well engraved and carefully executed, and the reverse figure is accurate both as regards attributes and posture. Late minimi, on the other hand, are usually extremely crude attempts at portraiture and design, which is often breaking up and quite unassignable to any recognized prototype.

Hoards indicate that radiate minimi first appeared on the economic scene towards the end of the third century—say, 290 or thereabouts. The next question to be decided is the reason for their production. Their re-appearance in later days was, of course, the result of the metal shortage, but in the third century no such conditions prevailed. In fact, the precise opposite seems to have been the case, for the base Gallic antoniniani, which had flooded the markets of Britain and the west only a couple of decades

previously, were still in circulation in vast quantities, and hoards even suggest that both they and their imitations were current well into the fourth and fifth centuries. The key to the solution of the problem may well be in the great re-coinage carried out by Carausius, the British Emperor, in *c.* 290, in a laudable attempt to place the economy of Britain upon a more stable footing. He replaced the base pieces of the Central and Gallic Empires (already virtually demonetized by Aurelian's reform) by a new well-silvered antoninianus of good weight, reducing the former merely to a nominal value. To remedy the shortage of small change consequent upon the demonetization and (presumably) withdrawal from circulation of the former currency, private persons and unofficial mints would strike these minimi, the circulation of which would be purely regional.

The continuance of the use of radiate minimi in Constantinian days, just before they were superseded in popularity by minimi with fourth-century types, is evidenced by two hoards, from Filton and Hove, both of which were buried *c.* 320. Later still (*c.* 400) another series of hoards[12] indicates not only the persistence in circulation of radiate minimi a century or more after their first appearance, but also the comparatively early manufacture of diademed minimi, mostly with "Fel. Temp." types, for the purposes of small change. But still another factor, which undoubtedly had much to do with the causes of the production of barbarous minimi, was starting to affect the economic life of the Empire at this time. The metal scarcity which became acute some fifty years later was already beginning to make itself felt in the last years of the fourth century, as is shown only too clearly by the closure of mints and the reduction of the regular bronze coinage to Æ4 module.

Although they had failed to compete in popularity with the "Fel. Temp." imitations, barbarous radiates had not been completely superseded. As we have seen, both large-size copies and

[12] *E.g.*, Duston and Richborough III.

minimi were still circulating towards the end of the fourth century, and hoards[13] show that even in post-Roman days, during the fifth and sixth centuries, radiate minimi were again being manufactured, though of a very degraded style and fabric. For more than a century and a half after the "Withdrawal," the copper scarcity naturally precluded the manufacture of any pieces above minim module until well into the sixth century, when (if we can draw any conclusions from the solitary hoard at our disposal—the Richborough IV hoard) the size of the current money seems to have undergone a considerable increase. In the absence of other hoards to which such a late date can with any certainty be given, however, it is neither possible nor wise to attribute more than a local significance to this phenomenon and to assert that copper was in better supply throughout the country at this time. Richborough, and in fact all Kent, was then in the hands of the Jutish invaders, and it has been suggested[14] that some, at least, of the coins of the radiate hoard were struck not by the Romano-Britons but by their Teutonic conquerors who, having attained a more settled way of living, were now beginning to feel the need of a coinage of their own. It may well be, in fact, that some of these pieces represent the earliest attempts at a native "Saxon" coinage, while others in the hoard, more closely akin to the Romano-British styles of imitations, seem to indicate that the conquerors made use also of barbarous coins which they had obtained by plunder or as "treasure trove." Consequently, we may surmise that copper was not so scarce among the invaders as

[13] *E.g.*, Perran-ar-worthal (late 5th century), Hayle, Mere and Whitchurch (all fifth to sixth centuries) and the Richborough Radiate hoard [Richborough IV] (*c.* 600).

[14] H. Mattingly & W. P. D. Stebbing in *Num. Notes & Monographs*, No. 80, p. 13. For a very sound argument for the late sixth-century date of the hoard based on stylistic affinities of certain of its coins with Saxon sceattas (which appeared probably about half a century later), see Derek Allen, in an appendix to the Monograph (*ibid.*, p. 117). The lateness of the hoard is also suggested by the presence of a few hybrids with radiate obverses and reverses copied from fourth-century "Fel. Temp." and "Gloria Romanorum" types. The date of production of these pieces must be placed considerably later (200–300 years?) than the date of their prototypes.

among the invaded, and that this was the reason for the apparent improvement in the metal position, which seems therefore to have been purely local.

We have seen from hoard evidence that radiate imitations were in fairly continuous use from the third to the fifth centuries and even later. From this continuity of circulation we may assume a continuity of manufacture, so that it is not difficult to imagine the persistent, if sporadic, striking of these pieces throughout the fourth century. The evidence of overstrikes underlines very strongly that of the hoards. Admittedly, examples are by no means common, but we may quote two here which support our hypothesis. One, in my own collection from Yorkshire (?Methley), is a Grade III barbarous radiate with Altar reverse overstruck on a hammered-out Constantinian "Vota" coin (issued probably *c.* 333 A.D.) [PLATE III, 12]; the other, from Corstopitum, is a radiate with a disintegrated obverse and reverse overstruck on a "Victoriae Dd. Auggq. Nn." of Constantius II or Constans (issued *c.* 340 A.D.) [PLATE III, 13].

That barbarous radiates underwent a revival in popularity in post-Roman times is not to be doubted, although the reason for this is not easy to discover. Since, during the period of metal scarcity, no further supplies of coin were being imported, the Romano-Britons had to rely upon very crude home-produced pieces to supplement the worn late Theodosian bronze which were the last coins to have been received from the official imperial mints. Moreover, since the difficult conditions which prevailed at the time owing to the Saxon invasions must have rendered impossible the working of the British mines, the only source of supply for the flans of these small and degenerate pieces would be the coins of former centuries dug up from the earth of those of more recent times which still remained in circulation. Occasionally one comes across barbarous radiates of a "brassy" appearance. These pieces are usually of very crude workmanship and struck on flans of varying shapes, not very often nicely

rounded. It has been suggested[15] that they were made from orichalcum coins (sestertii and dupondii) of the Early Empire, hammered out to the required thickness, roughly chisel-cut into small pieces and stamped with the new dies [*cf.* PLATE I, 7]. Indeed, the makeshift way of manufacturing the flans and of striking the coins indicates neither a very stable economy nor a very settled political situation, and some of the cruder specimens may even suggest a post-Roman date.

If, then, as seems likely, the Britons of the fifth and sixth centuries were forced to rely upon obsolete money for the production of their coins, why should they not have relied upon obsolete money for the types? We know that orthodox pieces of the third century as well as their imitations were current as late as the end of the fourth century and there is certainly no reason to suppose that they passed out of currency in post-Roman days; moreover, many hoards which had been buried at the time of Aurelian's reform must have been dug up by the hard-pressed and poverty-stricken Britons of the later fifth century and we can imagine that their contents would have been eagerly seized upon both for the metal which they contained and for their possibilities as prototypes. Constantinian and other fourth-century hoards would suffer a like fate—hence the apparent segregation of radiate and diademed minimi which, although circulating contemporaneously, are but rarely found associated in the same hoard.

The evidence of foreign hoards has now to be considered. A selection of these is given in Appendix C and, in spite of considerable differences in the history and economic conditions of Britain and the Continent, they corroborate in a singular manner the evidence of British hoards as regards the date and circulation of our copies.

[15] I am also indebted to Mr. Askew for this suggestion, the possibility of which had not previously occurred to me. In view of the statement at the end of this paragraph, it must not be supposed that *all* coins struck on orichalcum flans are late in date; there also exist specimens of a definitely "contemporary" style, and we may imagine that this method of improvising flans was in use at least from the latter half of the third century.

The fact that barbarous radiates were contemporary, or nearly so, with their prototypes is indicated by certain hoards of which those from Ahrweiler, La Blanchardière, Cattenes, Evreux and the Mazeau Marsh are sufficient proof. Of hoards containing radiate minimi, that from Jublains is undoubtedly the most important. It seems reasonable to conclude that this hoard was put into the earth at about the time of Aurelian (270–275)—whose reform, incidentally, was just as unpopular in Gaul as it was in Britain, so that it must have been the cause of the burial of hoards of the old money in both provinces. From this hoard we may be right in supposing that radiate minimi were being struck in Gaul some years before their first appearance in this country —a conclusion which is amply supported by the evidence of other hoards.[16] Indeed, the "Gallic" air of many early minimi in this country seems to point to their importation from Gaul, and the late Mrs. Wheeler, in her report on the Verulamium Theatre hoard,[17] suggested that "they were not of British manufacture."[18] This, of course, is a reasonable enough conclusion if, as seems likely, the production of radiate minimi on the Continent preceded their production in Britain by some twenty years.

That both large-size copies and minimi were still circulating on the Continent, as in Britain, at the end of the third or beginning of the fourth century, is shown by such hoards as those from Niedderrentgen, Étival-lès-Le Mans and Venèra, while the Han-sur-Lesse and the Ettelbruck II hoards indicate the continued circulation of large-size barbarous radiates during the early years of the fourth century. The Lavoye hoard, of 1,760 copies ranging from 14 mm. down to 6 mm. in diameter, would seem to belong to the seventies of the third century, as obverses based on coins of Gallienus, Claudius II and the Tetrici have been noted, but the fact that it was contained in a fourth-century vase postu-

[16] Duisburg, Metz(?), Montdidier, Oisseau-le-Petit, Pezou, the Saône, Ste. Honorine-des-Pertes, Strasbourg, Toucy, Verdes and the Vosges.

[17] *Num. Chron.*, 1937, pp. 211–228. [18] *Ibid.*, p. 225.

lates a somewhat later date for its burial. Of all the Continental finds, however, that from Autun is probably the most interesting. In a layer of carbon and ash there were found some broken crucibles, one still containing bronze; in one corner were numerous worn radiate minimi, obviously destined for the melting pot, while close by was a large quantity of minimi with Constantinian types (6–8 mm. in diameter), all in mint state. There is little doubt that we have here definite evidence of an unofficial workshop and proof not only that radiate minimi were still circulating in Gaul during the first half of the fourth century but also that, towards the middle of the century, they were being superseded, like their British counterparts, by minimi copied from contemporary coins.

The revival of radiate imitations seems to have taken place on the Continent rather earlier than in Britain, as is probably shown by the Wancennes hoard, which contained radiate minimi in association with two orthodox coins of Valentinian II, so that it may be dated to *c.* 390, and the Surcy hoard, which contained one orthodox Tetricus I, four barbarous Tetricus I and coins of the fourth century to Eugenius (392–394). The survival of radiates, both of large module and of minim size, at the end of the fourth century is indicated by both these hoards, as well as by the Éprave hoard (*c.* A.D. 400). Here, as at Autun, an irregular workshop was discovered, with several thousand radiate minimi 3 mm. in diameter, a heap of slag and an iron crucible containing copper waste and grains of bronze.

Finally, a hoard of 2,197 pieces from Dalmatia, buried *c.* A.D. 465–470, during the reign of the Byzantine Emperor Leo, suggests a late fifth-century date for the manufacture and circulation of radiate copies in view of the fine condition of its four barbarous radiates, one AE3 (small) and three minimi.

It may now be possible for us to make a rough chronological sketch of barbarous radiates from the evidence which we have outlined in the preceding pages. About 260 or a little later large-


BARBAROUS RADIATES:
HOARDS AND SITE-FINDS
IN BRITAIN
91
32
38
18
58
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74
92
47
28
71
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40
41
23
21
31
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6
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103
64
46
4
81
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72
96
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2
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101
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68
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7
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22
24
63
50
1
43
67
48
35
17
95
87
66
11
102
29
100
8
93
76
86
78
3
27
84
97
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73
13
12
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79
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69
94
82
55
16
54
80

Key to Map

1. Abingdon
2. Alchester
3. Allington
4. Alwalton
5. Amlweh
6. Ancaster
7. Asthall
8. Atworth
9. Baldock
10. Beckley
11. Bermondsey
12. Bitterne
13. Blackmoor
14. Bloxham
15. Bourton-on-the-Water
16. Brading
17. Bristol
18. Brougham
19. Brough-on-the Humber
20. Bury St. Edmunds
21. Caerhun
22. Caerleon (Segontium)
23. Caernarvon
24. Caerwent
25. Caister St. Edmund
26. Cambridge
27. Canterbury
28. Chapelfield
29. Cheddar
30. Chedworth
31. Chester
32. Chesters
33. Chesterton
34. Cirencester
35. Clapton-in-Gordano
36. Colchester
37. Coleford
38. Corbridge (Corstopitum)
39. Cranfield
40. Din Lligwy
41. Din Sulwy
42. Ditchley
43. Dorchester
44. Dorn
45. Duston
46. Emneth
47. Everton
48. Filton
49. Fletton
50. Frilford
51. Gt. Chesterford
52. Gt. Wymondley
53. Ham Hill
54. Hayle
55. Hengistbury Head
56. Higham Ferrers
57. Hove
58. Hovingham
59. Icklingham
60. Kenchester
61. Kiddington
62. Kings Sutton (Astrop)
63. Latton
64. Leicester
65. Lincoln
66. London Bridge
67. Long Wittenham
68. Lydney
69. Maiden Castle
70. Malton
71. Manchester
72. March (Linwood Farm)
73. Mere
74. Methley
75. Netley
76. Newbury
77. Nobottle
78. Otford
79. Patcham
80. Perran-ar-worthal
81. Peterborough
82. Poole
83. Redenhall
84. Richborough
85. St. Albans (Verulamium)
86. Silchester
87. Southwark
88. South Witham
89. Stone
90. Tackley
91. Uddingston
92. Upton
93. Wanborough
94. Weymouth Bay
95. Whitchurch
96. Wimblington
97. Wiveliscombe
98. Woodbridge
99. Woodeaton
100. Wookey Hole
101. Wootton
102. Worlebury Camp
103. Wroxeter

size imitations were first produced [PLATE IV, 1], very shortly afterwards to be followed (between 270 and 280 on the Continent and *c.* 290 in Britain) by minimi [PLATE IV, 2]. Copies in both sizes were struck [PLATE IV, 3, 4] until *c.* 330, when they gradually came to be replaced by Constantinian and, later, "Fel. Temp." imitations. They were manufactured only sporadically for the next century or so [PLATE IV, 5, 6], until, at about the middle of the fifth century, radiate minimi were again produced [PLATE IV, 7] and, as the shortage of metal became more acute, the modules fell to "minimissimi" size. Towards the end of the sixth century, in this country, radiate copies of somewhat larger module were made, but of these the only examples which we possess are those of the Richborough Radiate hoard and a few isolated examples, mostly of uncertain provenance [PLATE IV, 8–13; *cf.* IV, 14–18]. Later still, in the seventh century, the Teutonic settlers, when they felt the need for a regular coinage, employed radiate models for some of their thrymsas and sceattas: thus the third-century radiates came into their own again as prototypes for an entirely new series which is quite as interesting, though also as puzzling, as that which we have been considering in these pages.

APPENDIX A: BRITISH HOARDS

Site	*Date*	*Probable Burial Date*	*Total Quantity*	*Quantity of Barbarous*	*Type & Quantity of Minimi*	*Range*	*Number of Barbarous According to Reigns*	*References*
				ANGLESEA				
Amlweh	1937	*c.* 273/4	428	15	—	Septimius Severus—Tetricus I & II	Gallienus (1) Claudius II (3) Victorinus (1) Tetricus I (8) Tetricus II (2)	*BBCS*, 1938, pp. 168–183
				BEDFORDSHIRE				
Cranfield	1946	*c.* 348	1700	14	—	Claudius II (barb.); Tetricus I; Constantine I—Constantius II	Claudius II (1) 4th cent. (13)	*NC*, 1946, pp. 159–162 (Personal examination.)
				BERKSHIRE				
Long Wittenham	*c.* 1936	*c.* 273	102+	2+	—	Gallienus—Aurelian	Victorinus (1) Claudius II (1)	*NC*, 1936, pp. 319–320
				CAMBRIDGESHIRE				
Near Cambridge	1889	*c.* 273	±2500	66+	—	Gordian III—Aurelian	Tetricus I Tetricus II?	*NC*, 1889, pp. 332–334
Linwood	*c.* 1935	*c.* 270+	816	16	—	Elagabalus—Tetricus I & II	Postumus (1) Claudius II (1) Tetricus I (12) Tetricus II (2)	*NC*, 1935, pp. 57–62
Wimblington	1848	*c.* 270+	±2000	1+	—	Gallienus—Tetricus I & II	Claudius II (1)	*NC*, 1939, pp. 177–178
				CARNARVONSHIRE				
Segontium II (Carnarvon)	1922	*c.* 290	56	20	R(14)	Gallienus—Carausius[1]	Claudius II (1)[2] Tetricus I (2) Tetricus II (2) Uncertain radiates (15)	*ACh*, 1922, pp. 291, 312–313, 317–320 *YC*, 1923, pp. 115–118
Segontium III	*c.* 1923	*c.* 290	21	11	R(10)	Volusian—Tetricus I & II	Claudius II (1)[3] Tetricus II (1) Uncertain radiates (9)	*YC*, 1923, pp. 118–120

[1] The coin of Carausius was in mint state.
[2] The twenty barbarous were composed of six large-size copies and fourteen minimi.
[3] Composed of one large-size copy and ten minimi.

Site	*Date*	*Probable Burial Date*	*Total Quantity*	*Quantity of Barbarous*	*Type & Quantity of Minimi*	*Range*	*Number of Barbarous According to Reigns*	*References*
				CARNARVONSHIRE (CONTINUED)				
Hayle	1825	*c.* 460–550	many thousands	All	R (all, except a few)	—	A few copies of Æ3 of Postumus, Victorinus & Tetricus I; remainder minimi	*VCH, Cornwall V*, pp. 35–36 *NC*, 1936, pp. 202–209
Perran-ar-worthal	*c.* 1845	*c.* 460–550?	60+	All	R(all)	—	Tetricus I Tetricus II	Sainthill: *Olla Podrida*, II, p. 112 *VCH, Cornwall V*, pp. 34, 38 *NC*, 1853, proc. pp. 12–14
				DORSET				
Poole	1930	*c.* 273/4	965	6	—	Gordian III—Aurelian	Gallienus (1) Victorinus (1) Tetricus I (3) Tetricus II (1)	*NC*, 1933, pp. 229–232
Weymouth Bay	*c.* 1928	*c.* 460–550	4400+	47	R(4), D	Postumus—Allectus; Constantine I—Arcadius & Honorius	Tetricus I (9) Uncertain radiates (6) 4th cent. (32)	*DAST*, 1929, pp. 158–182 *NC*, 1931, pp. 14–27
				ESSEX				
Colchester	*c.* 1870	*c.* 500	40	All	R(20), D	—	Claudius II? (1) Tacitus? (1) Tetricus I (1) Tetricus II (4) Uncertain radiates (24) 4th cent. (9)	*NC*, 1934, pp. 255–262
Great Chesterford	before 1934	*c.* 273	89	7	—	Postumus—Tetricus I & II	Tetricus I	*NC*, 1934, p. 227
				GLOUCESTERSHIRE				
Cirencester	*c.* 1929	*c.* 410	924	11	D	Claudius II; Constantine I—Arcadius & Honorius	Uncertain radiates (2) 4th cent. (10)	*NC*, 1929, pp. 332–334
Coleford	1848	*c.* 273	300+	(Unspecified)	—	Valerian I, Gallienus, Postumus, etc.	(Unspecified)	*BGAST*, 1881/2, p. 109

Coleford: Park End	1852	*c.* 296	632	16+	—	Julia Domna—Allectus	Tetricus I+	*JBAA*, 1867, pp. 393–399 *BGAST*, 1881/2, pp. 111–122
Filton	1880	*c.* 330	2000–3000	(Unspecified)	R	Licinius I—Constans[1]	(Unspecified)	*PSA*, 1879/81, pp. 385–387
Filwood	*c.* 1875	*c.* 296	800+	(Unspecified)	R(800+)	(Confused account: apparently radiate minimi found associated with coins of Carausius and Allectus.[2])		*AJ*, 1870, pp. 69–70 *PSA*, 1879/81, pp. 387–388
GLOUCESTERSHIRE OR SOMERSET								
Near Bristol	before 1931	*c.* 273+	269	268	—	Victorinus[3]	Claudius II Tetricus I Tetricus II	*JRS*, 1931, pp. 104–105
HAMPSHIRE								
Blackmoor I	1873	*c.* 296	29802	66	R(1+)	Gordian III—Constantius I	Gallienus (2) Claudius II (4) Victorinus (5) Tetricus I (28) Tetricus II (7) Carausius (20)	*NC*, 1877, pp. 90–156
Blackmoor II	1875	271+	46	1	—	Gallienus—Tetricus I & II	Tetricus I (1)	*NC*, 1935, pp. 55–56
Netley Abbey	1867	*c.* 275	1821	38+	—	Valerian I—Aurelian	Gallienus (2) Claudius II (8+) Victorinus (5) Tetricus I (17+) Tetricus II (6+)	*JBAA*, 1867, pp. 168–174
HERTFORDSHIRE								
Verulamium I (St. Albans)	1930/3	*c.* 293	36	3	—	Gallienus—Carausius	Uncertain radiates (3)	*Rept.*, p. 110
Verulamium II	1930/3	*c.* 293	19	17	—	Carausius	Carausius (17)	*Rept.*, pp. 110–111
Verulamium III	1930/3	*c.* 273	52	3	—	Gallienus—Tetricus I & II[4]	Postumus (1) Uncertain radiates (2)	*Rept.*, p. 62
Verulamium IV (Theatre)	1934	*c.* 300	*c.* 800	All	R(616+)	—	Claudius II Postumus Victorinus Tetricus I Carausius?	*NC*, 1937, pp. 211–228

[1] All the regular coins were uncirculated. [2] But see *CCRB*, p. 115, n. 5. [3] The orthodox Victorinus was worn: all the copies were in mint state.

[4] The general condition of this hoard was very good, coins of Gallienus, Claudius II and Victorinus being in mint state.

Site	Date	Probable Burial Date	Total Quantity	Quantity of Barbarous	Type & Quantity of Minimi	Range	Number of Barbarous According to Reigns	References
KENT								
Allington	1907	c. 273	22	(Unspecified)	—	Tetricus I+	Tetricus I	*VCH, Kent* III, p. 144
Gillingham[1]	c. 1907	c. 400–450?	722	All?	R(7), D	—	Gordian III (1) Tetricus I (6) 4th cent. (370+)	*ACt*, 1909, proc., pp. xcii–xciv *VCH, Kent* III, pp. 154–155
Richborough II	1926	c. 450	1202	53	R(6), D	Maximinus I—Arcadius & Honorius	Tetricus I (1) Uncertain radiates (9) 4th cent. (43)	*Rept.* III, pp. 34, 192–195
Richborough III[2]	1931	c. 460–550	1238	1225	R.D.	Gallienus—Probus; Helena—Magnentius	Claudius II (9) Victorinus (2) 4th cent. (1133+)	*NC*, 1939, pp. 112–119
Richborough IV	1931	c. 600	563	541	R(83), D	Gallienus—Allectus (Constantine II?—Arcadius[3])	Gallienus Quintillus Tacitus Probus Postumus Victorinus Tetricus I Tetricus II 4th cent.	*NNM*, 80
LANARKSHIRE								
Uddingston	1848	c. 273?	(Unspecified)	(Unspecified)	—	Tetricus I+	(Unspecified)	*PSAS*, 1917/18, p. 273
LONDON								
Bermondsey	1945	c. 500	361	81?	R(1), D	Claudius II (barb.); Constantine I—Arcadius & Honorius	Claudius II (2) Uncertain radiate (1) 4th cent. (78?)	*NC*, 1946, pp. 167–169 (Personal Examination)
Southwark	1864	c. 273?	(Unspecified)	554	—	(Unspecified)	Claudius II Victorinus Tetricus I Tetricus II	*JBAA*, 1864, p. 339 *RCHM London*, III, p. 190

[1] Highly unreliable account.
[2] The account of this hoard includes site-finds: the hoard itself, of radiate and diademed minimi, had been scattered.
[3] It is not certain whether these pieces formed part of the hoard or not—see *NNM*, 80, p. 10.

					MONMOUTH			
Caerwent I	1902	*c.* 410+	4006	*c.* 550	R(44)	Gallienus—Carinus; Helena—Arcadius & Honorius	Uncertain radiates (44) 4th cent. (*c.* 506)	*BBCS*, 1924, pp. 92–93
					NORFOLK			
Caister St. Edmund	1930	*c.* 273	86	*c.* 43	—	Postumus—Tetricus I & II	(Unspecified)	*NA*, 1930/2, pp. 135–136
Emneth I	1935	271	*c.* 2100	13+	—	Gordian III—Tetricus I & II	Postumus (3) Victorinus (5) Tetricus I (4) Uncertain radiate (1)	*NC*, 1945, pp. 147–153
Emneth II	1941	271+	664 (+fragments)	1	—	Septimius Severus—Tetricus I	Victorinus (1)	*NA*, 1941/3, pp. 107–110 *NC*, 1943, p. 101
Redenhall	*c.* 1895	*c.* 460	144	78	R(4), D	Postumus—Quintillus; Theodora—Honorius; post-Theodosian (barb.)	Claudius II (3) Postumus (1) Tetricus I (8) Uncertain radiates (5) 4th cent. (60) 5th cent. (1)	*NC*, 1946, pp. 157–159 (Personal examination)
					NORTHAMPTONSHIRE			
Duston	*c.* 1869	*c.* 400+(?)	12	All	R(4), D	—	Tetricus I (5) Tetricus II (1) Uncertain radiate (1) 4th cent. (5)	*NC*, 1930, pp. 275–281
Nobottle	1929	*c.* 400	814	13	—	Lucius Verus; Victorinus—Allectus; Constantine I—Arcadius & Honorius	Claudius II (1) Uncertain radiate (1) 4th cent. (11)	*NC*, 1934, pp. 266–268 *AJ*, 1933, pp. 282–305
Peterborough	1904	*c.* 290	15	2	R(2)	Hadrian—Carausius	(Unspecified)	*BNJ*, 1904, pp. 349–351
					NORTHUMBERLAND			
Great Chesters	before 1902	*c.* 290(?)	120	85	R(85)	Valerian I—Quintillus	(Unspecified)	*AAel*, 1902, pp. 63–64
					NOTTINGHAMSHIRE			
Everton	1881	*c.* 293	410	1	—	Valerian I—Diocletian	Victorinus? (1)	*NC*, 1945, pp. 153–155
					OXFORDSHIRE			
Kiddington	before 1935	*c.* 420–430	1176	26	R(1), D	Claudius II; Constantine I—Arcadius & Honorius	Uncertain radiates (9) 4th cent. (17) [Blanks (10)]	*VCH*, *Oxon.*, I, p. 329 *NC*, 1936, pp. 82–87 *Oxon.*, 1936/7, pp. 70–80

Site	*Date*	*Probable Burial Date*	*Total Quantity*	*Quantity of Barbarous*	*Type & Quantity of Minimi*	*Range*	*Number of Barbarous According to Reigns*	*References*
KENT								
Allington	1907	*c.* 273	22	(Unspecified)	—	Tetricus I+	Tetricus I	*VCH, Kent* III, p. 144
Gillingham[1]	*c.* 1907	*c.* 400–450?	722	All?	R(7), D	—	Gordian III (1) Tetricus I (6) 4th cent. (370+)	*ACt*, 1909, proc., pp. xcii–xciv *VCH, Kent* III, pp. 154–155
Richborough II	1926	*c.* 450	1202	53	R(6), D	Maximinus I—Arcadius & Honorius	Tetricus I (1) Uncertain radiates (9) 4th cent. (43)	*Rept.* III, pp. 34, 192–195
Richborough III[2]	1931	*c.* 460–550	1238	1225	R.D.	Gallienus—Probus; Helena—Magnentius	Claudius II (9) Victorinus (2) 4th cent. (1133+)	*NC*, 1939, pp. 112–119
Richborough IV	1931	*c.* 600	563	541	R(83), D	Gallienus—Allectus (Constantine II?—Arcadius[3])	Gallienus Quintillus Tacitus Probus Postumus Victorinus Tetricus I Tetricus II 4th cent.	*NNM*, 80
LANARKSHIRE								
Uddingston	1848	*c.* 273?	(Unspecified)	(Unspecified)	—	Tetricus I+	(Unspecified)	*PSAS*, 1917/18, p. 273
LONDON								
Bermondsey	1945	*c.* 500	361	81?	R(1), D	Claudius II (barb.); Constantine I—Arcadius & Honorius	Claudius II (2) Uncertain radiate (1) 4th cent. (78?)	*NC*, 1946, pp. 167–169 (Personal Examination)
Southwark	1864	*c.* 273?	(Unspecified)	554	—	(Unspecified)	Claudius II Victorinus Tetricus I Tetricus II	*JBAA*, 1864, p. 339 *RCHM London*, III, p. 190

[1] Highly unreliable account. [2] The account of this hoard includes site-finds: the hoard itself, of radiate and diademed minimi, had been scattered.
[3] It is not certain whether these pieces formed part of the hoard or not—see *NNM*, 80, p. 10.

					MONMOUTH			
Caerwent I	1902	*c.* 410+	4006	*c.* 550	R(44)	Gallienus—Carinus; Helena—Arcadius & Honorius	Uncertain radiates (44) 4th cent. (*c.* 506)	*BBCS*, 1924, pp. 92–93
					NORFOLK			
Caister St. Edmund	1930	*c.* 273	86	*c.* 43	—	Postumus—Tetricus I & II	(Unspecified)	*NA*, 1930/2, pp. 135–136
Emneth I	1935	271	*c.* 2100	13+	—	Gordian III—Tetricus I & II	Postumus (3) Victorinus (5) Tetricus I (4) Uncertain radiate (1)	*NC*, 1945, pp. 147–153
Emneth II	1941	271+	664 (+fragments)	1	—	Septimius Severus—Tetricus I	Victorinus (1)	*NA*, 1941/3, pp. 107–110 *NC*, 1943, p. 101
Redenhall	*c.* 1895	*c.* 460	144	78	R(4), D	Postumus—Quintillus; Theodora—Honorius; post-Theodosian (barb.)	Claudius II (3) Postumus (1) Tetricus I (8) Uncertain radiates (5) 4th cent. (60) 5th cent. (1)	*NC*, 1946, pp. 157–159 (Personal examination)
					NORTHAMPTONSHIRE			
Duston	*c.* 1869	*c.* 400+(?)	12	All	R(4), D	—	Tetricus I (5) Tetricus II (1) Uncertain radiate (1) 4th cent. (5)	*NC*, 1930, pp. 275–281
Nobottle	1929	*c.* 400	814	13	—	Lucius Verus; Victorinus—Allectus; Constantine I—Arcadius & Honorius	Claudius II (1) Uncertain radiate (1) 4th cent. (11)	*NC*, 1934, pp. 266–268 *AJ*, 1933, pp. 282–305
Peterborough	1904	*c.* 290	15	2	R(2)	Hadrian—Carausius	(Unspecified)	*BNJ*, 1904, pp. 349–351
					NORTHUMBERLAND			
Great Chesters	before 1902	*c.* 290(?)	120	85	R(85)	Valerian I—Quintillus	(Unspecified)	*AAel*, 1902, pp. 63–64
					NOTTINGHAMSHIRE			
Everton	1881	*c.* 293	410	1	—	Valerian I—Diocletian	Victorinus? (1)	*NC*, 1945, pp. 153–155
					OXFORDSHIRE			
Kiddington	before 1935	*c.* 420–430	1176	26	R(1), D	Claudius II; Constantine I—Arcadius & Honorius	Uncertain radiates (9) 4th cent. (17) [Blanks (10)]	*VCH*, *Oxon.*, I, p. 329 *NC*, 1936, pp. 82–87 *Oxon.*, 1936/7, pp. 70–80

Site	*Date*	*Probable Burial Date*	*Total Quantity*	*Quantity of Barbarous*	*Type & Quantity of Minimi*	*Range*	*Number of Barbarous According to Reigns*	*References*
						OXFORDSHIRE (CONTINUED)		
Woodeaton I	before 1931	*c.* 340	1551 (incl. fragments)	16	—	Tetricus I; Licinius I—Delmatius	Uncertain radiates (3) 4th cent. (13)	*JRS*, 1931, pp. 104, 108–109 *VCH, Oxon.*, I, p. 328
						SHROPSHIRE		
Wroxeter I (Hypocaust)	1859	*c.* 410+ (?)	132	8	R(6)[1]	Claudius II & Tetricus I (?barb.); Constantine I—Valens	Claudius II? (1) Tetricus I? (1) Uncertain radiates (6)	T. Wright: *Uriconium*, p. 68 *NC*, 1859, pp. 79–83 *VCH, Salop.*, I, pp. 217–218 *Kenchester Rept.* I, p. 55
Wroxeter II (Shop)	1859	*c.* 410+ (?)	38	1	R(1)	Caracalla; Carausius; Constantinian era—Gratian	(Unspecified)	T. Wright: *Uriconium*, p. 69 *VCH, Salop.*, I pp. 217–218
						SOMERSET		
Clapton-in-Gordano	1922	*c.* 296	3438	3+	—	Claudius I (barb.); Gallienus—Diocletian & Maximian	Claudius I (1) Tetricus I (2)	*NC*, 1927, pp. 209–218
Ham Hill	1700+	*c.* 273	491	9	—	Gallienus—Tetricus I & II	Claudius II (2) Victorinus (3) Tetricus I (4)	*NC*, 1936, pp. 30–42
Whitchurch	*c.* 1870	*c.* 460–550	422	All	R(422)	—	(Unspecified)	*NC*, 1934, pp. 92–105 *NC*, 1935, pp. 16–20
Wiveliscombe II	1946	*c.* 400	1139	46	D	Tetricus I & II; Helena—Arcadius	Uncertain radiates (2) 4th cent. (44)	*NC*, 1946, pp. 163–165
Worlebury Camp	1852	*c.* 500	241	77	R(1), D	Salonina; Claudius II; Helena—Arcadius & Honorius	Claudius II (1) Uncertain radiate (1) 4th cent. (75)	*NC*, 1946, pp. 153–156

[1] The respective accounts of this hoard are at variance with one another. Wright gives the barbarous as six radiate minimi (followed by Sutherland in *CCRB*, Appx. I, p. 116) and Roach Smith (in *NC*, 1859) gives only two radiates, both of which appear from their description to be at least semi-barbarous, and one hundred thirty fourth-century pieces, including "rude copies." The fullest account is in the *Kenchester Report*, I, which gives two radiates, one hundred eighteen fourth-century from Constantine I to Valens, six uncertain and six minimi.

					SUFFOLK			
Icklingham II	1902	c. 410	1064	46	R(3), D	Gallienus (Caesar)— Arcadius & Honorius	Tetricus I (5) Uncertain radiates (6) 4th cent. (35)	*NC*, 1929, pp. 319–327 *NC*, 1938, pp. 59–61
Icklingham IV	c. 1934	c. 470	21	All	R(5), D	—	Claudius II Tetricus I Tetricus II Probus Uncertain radiates 4th cent.	*NC*, 1934, pp. 262–266
Woodbridge	c. 1935	c. 400	442	5	—	Uncertain radiates (barb.); Constantinian era— Magnus Maximus	Uncertain radiates (5)	*NC*, 1935, pp. 49–53
					SUSSEX			
Hove	1939	c. 330	455	All	R	—	Claudius II Victorinus Tetricus I Tetricus II Carausius Uncertain radiates	*SNQ*, 1939, pp. 234–239
					WESTMORLAND			
Brougham	1910	c. 290	c. 500	143	R(134)	Valerian I?; Postumus— Tetricus I & II	Tetricus I (1) Tetricus II (6) Uncertain radiates (136)	*CWAST*, 1911, pp. 209–211
					WILTSHIRE			
Mere	c. 1870	c. 460–550	100	All	R(100)	—	Claudius II Victorinus Tetricus I Tetricus II	*NC*, 1934, pp. 300–302
					YORKSHIRE			
Norton (hoard?)	?	c. 340?	8	1	—	Victorinus; Claudius II; Constantinian era	(Unspecified)	*Malton Rept.* V, p. 117
Upton	1927	c. 273	303	1	—	Gallienus—Tetricus I	Victorinus (1)	*NC*, 1929, pp. 318–319

APPENDIX B: BRITISH SITE-FINDS

ANGLESEY:	?Din Lligwy.	*AAST*, 1929, p. 26.
	Din Sulwy.	*AAST*, 1929, p. 26.
BERKSHIRE:	Abingdon.	*CCRB*, p. 181.
	Frilford, nr. Abingdon.	*Arch.*, 1868, pp. 417–485.
		Rept., p. 42.
	Newbury.	*CCRB*, p. 182.
BUCKINGHAMSHIRE:	Stone.	*CCRB*, p. 181.
CARNARVONSHIRE:	Caerhun.	*ACb*, 1925, pp. 322–341.
	Segontium (Carnarvon).	*ACb*, 1922, pp. 313–315.
CHESHIRE:	Chester.	*CASJ*, 1939, pp. 44–45.
		CCRB, p. 183.
DENBIGHSHIRE:	Castle Lyons.	*YC*, 1930, pp. 87–97.
ESSEX:	Colchester.	(Personal examination.)
	Great Chesterford.	*NC*, 1934, pp. 225–227.
GLOUCESTERSHIRE:	Bourton-on-the-Water.	*BGAST*, 1934, pp. 121–128.
		NC, 1935, pp. 275–281.
	Chedworth Villa.	*NC*, 1865, pp. 175–179.
	Chesters Villa, Woolaston.	*ACb*, 1938, p. 114.
		(Personal examination.)
	Cirencester.	*NC*, 1936, pp. 261–263.
	Lydney.	*Rept.*, pp. 104–131.
HAMPSHIRE:	Bitterne.	*NC*, 1934, pp. 223–224.
	Hengistbury Head.	*Rept.*, pp. 65–71.
	Neetham.	*CCRB*, p. 181.
	Silchester.	*NC*, 1929, pp. 328–332.
		CCRB, pp. 180–181.
		(Personal examination.)
HEREFORDSHIRE:	Kenchester.	*WCT*, 1912/13, pp. 188–210.
		Rept. I, pp. 32–64; II, pp. 48–59.
HERTFORDSHIRE:	Baldock.	*JBAA*, 1933, pp. 235–246.
		EHAST, 1942, pp. 154–161.
	Great Wymondley.	*VCH. Herts.*, IV, p. 171.
	Verulamium (St. Albans).	*NC*, 1859, pp. 101–141.
		NC, 1932, pp. 239–242.
		Arch., 1934, pp. 213–247 *passim*.
		NC, 1937, pp. 212–214 *passim*.
		CCRB, pp. 178–182.
		Rept., pp. 223–239.
		EHAST, 1942, pp. 154–161.

		NC, 1945, pp. 159–163. (Personal examination.)
HUNTINGDONSHIRE:	Alwalton.	(Personal examination.)
	Chesterton.	(Personal examination.)
ISLE OF WIGHT:	Brading Villa.	(Personal examination.)
KENT:	Canterbury.	(Personal examination.)
	Otford.	*Rept.*, pp. 6, 8.
	Richborough.	*Rept.* I, pp. 106–173; II, pp. 106–231; III, pp. 187–235.
		CCRB, pp. 179, 182.
		NC, 1939, pp. 112–119 *passim.*
		NC, 1943, p. 72.
LANCASHIRE:	Chapelfield.	*Rept.* V, p. 80.
	Manchester.	*Rept.* (Appx. of Coins.)
LEICESTERSHIRE:	Leicester.	*NC*, 1940, pp. 24–31.
LINCOLNSHIRE:	Ancaster.	*JAABI*, 1932, pp. 16–17.
	Lincoln.	*JAABI*, 1932, pp. 16–17.
	South Witham, nr. Grantham.	(Personal examination.)
LONDON:	London Bridge.	*NC*, 1841 (=1842), pp. 187–194.
MONMOUTHSHIRE:	Caerleon.	*BBCS*, 1924, pp. 98–100.
	Caerwent.	*BBCS*, 1924, pp. 95–98; 1927/9, pp. 99–100.
NORFOLK:	Caister St. Edmund.	*CCRB*, pp. 178–181, 183.
NORTHAMPTONSHIRE:	Higham Ferrers.	(Personal examination.)
	Duston.	*NC*, 1934, pp. 221–222.
	King's Sutton.	*CCRB*, p. 178.
	Peterborough.	(Personal examination.)
NORTHUMBERLAND:	Corstopitum (Corbridge).	*CCRB*, pp. 178–182. (Personal examination.)
OXFORDSHIRE:	Alchester.	*AntJ*, 1932, pp. 62–63. *CCRB*, p. 182.
	Asthall.	(Personal examination.)
	Beckley.	*CCRB*, p. 182.
	Bloxham.	*Oxon.*, 1938, p. 53.
	Ditchley Villa.	*Oxon.*, 1936/7, pp. 65–67.
	Dorchester.	*Oxon.*, 1936/7, pp. 68–69.
	Tackley.	*Oxon.*, 1936/7, pp. 93–100.
	Woodeaton.	*CCRB*, pp. 181–182. (Personal examination.)
	Wootton.	*CCRB*, p. 183.

SHROPSHIRE:	Wroxeter.	*Rept.* I, pp. 81–96; II, pp. 54–83; III, pp. 67–112.
SOMERSET:	Cheddar.	(Personal examination.)
	Wookey Hole.	(Personal examination.)
SUFFOLK:	Icklingham.	(Personal examination.)
SUSSEX:	Patcham.	*VCH., Sussex* III, p. 51.
WILTSHIRE:	Atworth Villa.	*WAM*, 1940/2, pp. 76–87.
	Latton, nr. Cricklade.	*NC*, 1864, pp. 216–223.
	Wanborough, Swindon.	*NC*, 1939, pp. 291–292.
WORCESTERSHIRE:	Dorn.	*VCH., Worcs.* I, p. 221.
YORKSHIRE:	Brough-on-the-Humber.	*Malton Rept.* V, pp. 54–55.
	Hovingham.	*Malton Rept.* V, pp. 90–92.
	Malton.	*Rept.* II, pp. 84–115.
	Methley.	(Personal examination.)

APPENDIX C: FOREIGN HOARDS

APPENDIX [illegible]

Site	Date	Probable Burial Date	Total Quantity	Quantity of Barbarous	Type & Quantity of Minims	Range	[illegible] According to Range	References
BELGIUM								
Éprave (workshop)	c. 1889	c. 400	Several thousands	(Majority)	R(majority)	(Unspecified—Magnus Maximus & Arcadius)	(Unspecified)	[illegible]
Han-sur-Lesse	1862	c. 305	2153 (originally several thousands)	6+	—	Vespasian; Elagabalus; Severus Alexander (3 denarii); Gallienus—Galerius Maximian (Æ3—outlier)	Tetricus I (1) Tetricus II (5) (Probably others)	RBN, 1862, pp. [illegible]
Wancennes	1883	c. 390	251	248?	R(248?)	Gaulish; Tetricus I & II (barb.); Valentinian II	Tetricus I Tetricus II	*ASAN*, 1883, p. 367 *TMR*, p. 270, No. 711 *BIAL*, 1908, p. 303, n. 1
FRANCE								
Autun (workshop)	c. 1894	c. 340	(Unspecified)	(All)	R.D.	—	Tetricus I & II 4th cent.	*MSE*, 1897, p. 57 *P-VCIN*, Bruxelles, 1910, p. 608
La Blanchardière	1874	c. 273	8578	(Unspecified)	—	Philip I—Aurelian	Victorinus Tetricus I Tetricus II	*RHAM*, 1880, pp. 237–246 *TMR*, p. 227, No. 509
Etival-lès-Le Mans	1908	c. 300	(Unspecified)	(Unspecified)	R	(Unspecified)	Tetricus I Tetricus II	*P-VCIN*, Bruxelles, 1910, p. 601, n. 3
Evreux	1890	c. 276/7	110 000+	(Large quantity)	—	Philip II—Probus[1]	Tetricus I Tetricus II	*RN*, 1892, pp. 7–27 *RBN*, 1892, pp. 321–322
Jublains	1879	c. 273	4493	(Large quantity)	R(600+) [7–10 mm.]	Tiberius—Commodus; Valerian I—Aurelian	Tetricus I (80) Tetricus II (c. 50) Uncertain radiates (c. 470)	*RHAM*, 1880, pp. 117; 120–123; 221–237 *NC*, 1881, pp. 27; 30–31
Lavoye[2]	1920	c. 300+?	1760	(All)	R(majority) [6–14 mm.]	—	Gallienus (3) Claudius II (10) Tetricus I (25) Tetricus II (10)	*RN*, 1940, pp. 83–86
Mazeau Marsh	1862	c. 272	c. 7000	(Unspecified)	—	Valerian I—Aurelian	Tetricus I Tetricus II	*TMR*, pp. 244/5, No. 583

[1] The coin of Probus was in nearly mint state.

[2] Discovered in a fourth-century vase.

Metz(?)	1937	c. 273?	144	(All)	R(144)	—	Tetricus I Tetricus II	*RN*, 1940, pp. 86–87
Montdidier	1910	c. 273?	(Unspecified)	(Unspecified)	R	(Unspecified)	Tetricus I Tetricus II	*P–VCIN*, Bruxelles, 1910, p. 601, n. 3
Niedderrentgen	1896	c. 290–300	c. 15400	2588	R(c. 2588)	Valerian I—Maximian Hercules	(Unspecified)	*RN*, 1896, p. 359 *TMR*, pp. 288–289, No. 797
Oisseau-le-Petit	c. 1817	c. 273?	[8 kgm.]	(All)	R (majority) [9–15 mm.]	—	Tetricus I Tetricus II	*BSSM*, 1836/7, pp. 227–228 *TMR*, p. 229, No. 518
Pezon	1935	c. 273	3000+	48+	R(26+)	Gallienus—Tetricus I & II	Claudius II (3) Victorinus (1) Tetricus I (31) Tetricus II (13)	*RN*, 1940, pp. 69–81; 97–98
Ste.-Honorine-des-Pertes	1830	c. 273?	(Unspecified)	(Unspecified)	R(all)	—	Tetricus I Tetricus II	*P–VCIN*, Bruxelles, 1910, p. 599
Saône	1933	c. 273?	[7 kgm.]	6+	R(2+)	Claudius II; Tetricus I & II	Claudius II (2) Tetricus I (2) Tetricus II (1) Uncertain radiate (1)	*RN*, 1940, p. 83
Strasbourg	1893	c. 273	2500	(All)	R(2500) [8–12 mm.]	—	Tetricus I+	*MGE*, 1895, pp. 3–12
Surcy	1897	c. 394	300–400	5+	—	Tetricus I; Constantinian era—Eugenius (according to Blanchet in *BSAF*, to Anastasius)	Tetricus I (4) 4th cent. (1)	*BSAF*, 1897, pp. 368–369 *TMR*, p. 200, No. 402
Toucy	1936	c. 273	2240+	(All)	R (some)	—	Victorinus (1) Tetricus I (40+)	*RN*, 1940, pp. 81–83
Verdes	1900	c. 273?	4000–5000	(All)	R(4000–5000) [6–10 mm.]	—	Tetricus I Tetricus II	*P–VCIN*, Bruxelles, 1910, p. 600
La Vineuse I	1938	c. 280	8760	5563	R(some) [$2\frac{1}{2}$–$12\frac{1}{2}$ mm.]	Valerian I—Aurelian	Gallienus (4) Claudius II (15) Postumus (2) Victorinus (15) Tetricus I & II (3925) Uncertain radiates (1602)	*RN*, 1942, pp. 23–102
The Vosges	c. 1880	c. 273?	(Unspecified)	(Unspecified)	R	(Unspecified)	(Unspecified)	*P–VCIN*, Bruxelles, 1910, p. 599

Site	*Date*	*Probable Burial Date*	*Total Quantity*	*Quantity of Barbarous*	*Type & Quantity of Minimi*	*Range*	*Number of Barbarous According to Reigns*	*References*
				GERMANY				
Ahrweiler	1876	*c.* 276	7000	(Unspecified)	R	(Unspecified)	(Unspecified)	*BJ* (as *VARJ*), 1876, p. 161 *WZGK*, 1888, pp. 151–152
Cattenes	1878	*c.* 273	12093	63	—	Valerian I—Aurelian	Claudius II (2) Postumus (2) Victorinus (6) Tetricus I (35) Tetricus II (18)	*ZfN*, 1880, pp. 315–346
Duisburg	1869	*c.* 273?	80	(All)	R(80)	—	Tetricus I Tetricus II	*BJ*, 1872, p. 36
				ITALY				
Venèra	1876	*c.* 295	46341	20	—	Gordian III—Diocletian & Maximian	Claudius II (10) Tacitus (1) Florian (1) Probus (4) Tetricus I (3) Tetricus II (1)	*ARALM*, 1879/80, pp. 3–213
				LUXEMBURG				
Ettelbruck II	1889	*c.* 300–305	1982	7+	—	Gallienus—Constantius I & Galerius Maximian (Caesars)	Gallienus (2) Claudius II (3) Tetricus I (1) Tetricus II (1)	*PIL*, 1891/5, pp. 303–384 *RN*, 1896, p. 111
				SWITZERLAND				
Augst (Augusta Rauriva) Windisch (Vindonissa)	?	*c.* 350?	91	(All)	R(majority) [8–18 mm.]	(Part of hoards including late 3rd century regular coins)	Claudius II (11) Victorinus (4) Tetricus I (57) Tetricus II (4) 4th cent. (15)	*RSN*, 1895, pp. 243–246 *P-VCIN*, Bruxelles, 1910, p. 598, n. 1
				YUGOSLAVIA				
Dalmatia	?	*c.* 465–470	2197	*c.* 262	R(3)[1]D	Greek; Uncertain radiates (barb.); Diocletian—Leo	Uncertain radiates (4) 4th cent. (1) 5th cent. (*c.* 257)	*NC*, 1934, pp. 269–283

[1] In fine condition.

LIST OF ABBREVIATIONS USED IN APPENDICES

AAel: Archaeologia Aeliana.

AAST: Transactions of the Anglesey Archaeological Society.

ACb: Archaeologia Cambrensis.

ACt: Archaeologia Cantiana.

AJ: Archaeological Journal.

AntJ: Antiquaries Journal.

ARALM: Atti della Reale Accademia de' Lincei (Memorie).

Arch.: Archaeologia.

ASAN: Annales de la Société archéologique de Namur.

BBCS: Bulletin of the Board of Celtic Studies.

BGAST: Transactions of the Bristol and Gloucestershire Archaeological Society.

BIAL: Bulletin de l'Institut archéologique liégeois.

BJ: Bonner Jahrbücher.

BNJ: British Numismatic Journal.

BSAF: Bulletin de la Société des Antiquaires de France.

BSSM: Bulletin de la Société d'agriculture, science et arts du Mans.

CASJ: Journal of the Chester and North Wales Architectural, Archaeological and Historical Society.

CCRB: Sutherland: Coinage and Currency in Roman Britain (Oxford, 1937).

CWAST: Transactions of the Cumberland and Westmorland Archaeological Society.

D: diademed.

DAST: Transactions of the Dorset Archaeological Society.

EHAST: Transactions of the East Hertfordshire Archaeological Society.

JAABI: Journal of the Antiquarian Association of the British Isles.

JBAA: Journal of the British Archaeological Association.

JRS: Journal of Roman Studies.

MGE: Mittheilungen der Geschichte für Erhaltung der gesch. Denkmäler im Elsass.

MSE: Mémoires de la Société éduenne.

NA: Norfolk Archaeology.

NC: Numismatic Chronicle.

NNM: Numismatic Notes and Monographs.

Oxon.: Oxoniensia.

PIL: Publications de la Section historique de l'Institut royal grand-ducal de Luxembourg.

PSA: Proceedings of the Society of Antiquaries of London.

PSAS: Proceedings of the Society of Antiquaries of Scotland.

P–VCIN: Procès-verbaux du Congrès international de numismatique.
R: radiate.
RBN: Revue belge de numismatique.
RCHM: Royal Commission for Historical Monuments.
Rept.: Report.
RHAM: Revue historique et archéologique du Maine.
RN: Revue numismatique.
RSN: Revue suisse de numismatique.
SNQ: Sussex Notes and Queries.
TMR: Blanchet: Les Trésors de monnaies romaines (Paris, 1900).
VARJ: Jahrbücher des Vereins von Alterthumsfreunde im Rheinlande.
VCH: Victoria County History.
WAM: Wiltshire Archaeological Magazine.
WZGK: Westdeutsches Zeitschrift für Geschichte und Kunst.
YC: Y Cymmrodor.
ZfN: Zeitschrift für Numismatik.

The following excavation reports have also been used.

Reports of the Research Committee of the Society of Antiquaries:

Nos. 1, 2, 4. J. P. Bushe-Fox: *Wroxeter*, I, Oxford, 1913; II, Oxford, 1914; III, Oxford, 1916.
No. 3. J. P. Bushe-Fox: *Hengistbury Head*, Oxford, 1915.
Nos. 6, 7, 10. J. P. Bushe-Fox: *Richborough*, I, Oxford, 1926; II, Oxford, 1928; III, Oxford, 1932.
No. 9. R. M. & T. V. Wheeler: *Lydney*, Oxford, 1932.
No. 11. R. M. & T. V. Wheeler: *Verulamium*, Oxford, 1936.

Leeds & Harden: *The Anglo-Saxon Cemetery at Abingdon, Berks.*, Oxford, 1930. (For site-finds from Frilford.)

G. H. Jack & A. G. K. Hayter: *Excavations on the Site of the Romano-British Town of Magna, Kenchester, Herefordshire*, 1912–13, I, Hereford, 1916; II (1924–25), Hereford, 1926. (Vol. I also for Wroxeter I hoard.)

Roman Malton and District Reports:

No. 2. P. Corder: *The Defences of the Roman Fort at Malton*, Leeds, 1930.
No. 5. M. K. Clark: *A Gazetteer of Roman Remains in East Yorkshire*, Leeds, 1935. (For Norton hoard and site-finds from Brough, Chapelfield and Hovingham.)

F. A. Bruton: *The Roman Fort at Manchester*, Manchester, 1909.

B. W. Pearce: *Report of the Excavation Committee of the Sevenoaks Society on the Roman Site at Otford, 31 Dec. 1928*, London, 1929.

KEY TO THE PLATES

PLATE I

1. Minimus copying 5th century types: rev. Chi-Rho. *Redenhall hoard.* Norwich Museum.
2. Semi-barbarous striking at official(?) mint: Constantine II, rev. Romae Aeternae. Own collection.

Examples of flan manufacture:

3. Flattened globule: rev. Sol. Own collection.
4. Overstrike: rev. Fel. Temp. Reparatio (legionary & horseman) on Fel. Temp. Reparatio (phoenix). Own collection.
   Cp. rev. legends (CONSTANTIVS, etc.) of "Carausius II" coins.
5. Old coin filed down: rev. Fides. Own collection.
6. Old coin cut into quarters and restruck: rev. Altar. *Verulamium.* Verulamium Museum.
7. Old coin hammered out and cut up: rev. Pax. *Colchester.* Colchester Museum.
8. Clipped from sheet metal: rev. Jupiter. Own collection.
9. Cut from rod: rev. Fel. Temp. Reparatio (legionary & horseman). *Colchester.* Colchester Museum.
10. Cast copy: rev. Sacrificial Implements. *Redenhall hoard.* Norwich Museum.
11. Clipped and rounded fragment: Magnentius, rev. *Chi-Rho. Worlebury Camp hoard.* Taunton Museum.
12. Clipped siliqua: Jovian, rev. Vot. V. Mult. X. Own collection.

Stylistic varieties:

13. Lined-in figure: rev. Pax. *Corstopitum.* Corstopitum Museum.
14. Solid figure: rev. Mars. *Verulamium.* Verulamium Museum.
15. Decorated circle surrounding type: rev. male figure. Corstopitum Museum.

PLATE II

1. Fel. Temp. with PLN mint-mark. Own collection.

Varieties of legend:

2. Sol with HER.DEV[SONIEN]SI legend. Own collection.

3. Fortuna with SALVS legend. *Verulamium*. Own collection.
4. Good obv. legend but blundered rev. legend: rev. Spes. Own collection.

Varieties of type:

5. Claudian copy: rev. Minerva (exaggerated shield). Obv. die-identity with coin from *Lincoln*. Own collection.
6. Disintegrated obv. (crown surviving): rev. Palm of Hilaritas? *Somerset* (*?Cheddar*). Own collection.
7. Fel. Temp. (emphasis on horseman). *Colchester*. Colchester Museum.
8. Survival of letter E in FELICITAS: rev. Felicitas. *Verulamium*. Verulamium Museum.
9. Spes holding whip of Sol. Own collection.
   Note: VIRTVS AVG legend.

Portraiture:

10. Tetricus I: rev. Salus. *Corstopitum*. Corstopitum Museum.
11. Tetricus II: rev. Pax. *Corstopitum*. Corstopitum Museum.
12. Claudius II, Divus: rev. Pax (hybrid). *Verulamium*. Verulamium Museum.
13. Victorinus: rev. Salus. *Yorks* (*?Methley*). Own collection.
14. Postumus: rev. Mars (base Æ). Own collection.
15. Gallienus: rev. Nobilitas. Own collection.
16. Quintillus: rev. Victory. Own collection.
17. Probus: rev. Spes. Own collection.
18. Aurelian: rev. Victory. Own collection.
19. Tacitus: rev. Altar (hybrid). Own collection.
20. Magnia Urbica. Ashmolean Museum.

Reverse types:

PLATE III

1. Weakened type: rev. Pax with transverse sceptre. Own collection.
2. Unattributed type: rev. Male figure. *Colchester*. Colchester Museum.
3. Equestrian figure. *Colchester*. Colchester Museum.
4. Double obverse: Tetricus I/Tetricus II. Own collection.
5. Dismembered reverse. *Verulamium*. Own collection.

Grades of copies:

6. Grade I, large: rev. Salus. *Corstopitum.* Corstopitum Museum.
7. Grade I, minimus: rev. Victory. Obv. die-identity with coin from *Colchester.* Own collection.
8. Grade II, large: rev. Salus. *Corstopitum.* Corstopitum Museum.
9. Grade II, minimus: rev. Female figure. *Verulamium.* Verulamium Museum.
10. Grade III, large: rev. Male figure holding trident. *Corstopitum.* Corstopitum Museum.
11. Grade III, minimus: rev. Altar. *Verulamium.* Verulamium Museum.

Overstrikes:

12. Radiate (rev. Altar) on Constantinian "Vota" coin. *Yorks* (*?Methley*). Own collection.
13. Radiate (rev. Dismembered) on "Victoriae DD. Auggq. NN." (*c.* 340). *Corstopitum.* Corstopitum Museum.

Suggested chronological sequence:

PLATE IV

1. Contemporary striking: rev. Laetitia. *Canterbury.* Verulamium Museum.
2. Early minimus: rev. Female figure. *Colchester.* Colchester Museum.
3. Late 3rd or early 4th century striking?: rev. Pax, radiate. Own collection.

   Note: the radiate Pax is exclusively a Carausian type.
4. Late 3rd or early 4th century minimus: rev. Sol. *Peterborough.* Own collection.

   Note: the "Carausian" portrait on the obv. and the Carausian mint-mark (C) on the rev.
5. 4th century striking?: rev. Pax, radiate. Own collection.
6. Late 4th or early 5th century striking?: rev. Laetitia. *Colchester.* Colchester Museum.

   Cp. style of late 4th century Æ4.
7. Late minimus: rev. Man in tunic. Own collection.
8. "Sceatta-like" imitation: rev. Sol. Own collection.

   Cp. obv. of Pl. IV. 14.

9. "Sceatta-like" imitation: rev. Hilaritas. Own collection.
Cp. obv. of Pl. IV. 15.

10. "Sceatta-like" imitation: rev. Salus? *Verulamium.*
Verulamium Museum.
Cp. Pl. IV. 16 for inner circle on obv. and rev.

11. "Sceatta-like" imitation: rev. Eagle. Own collection.
Cp. obv. of Pl. IV. 17.

12. "Sceatta-like" imitation: rev. Man with spear. Obv. and rev. die-identities with coin from *Richborough hoard.* Own collection.
Cp. obv. of Pl. IV. 18.

13. "Un-Roman" imitation: rev. Three figures. Overstruck on uncertain coin. Own collection.
Cp. similar pieces from Richborough Radiate hoard.

Anglo-Saxon coins:

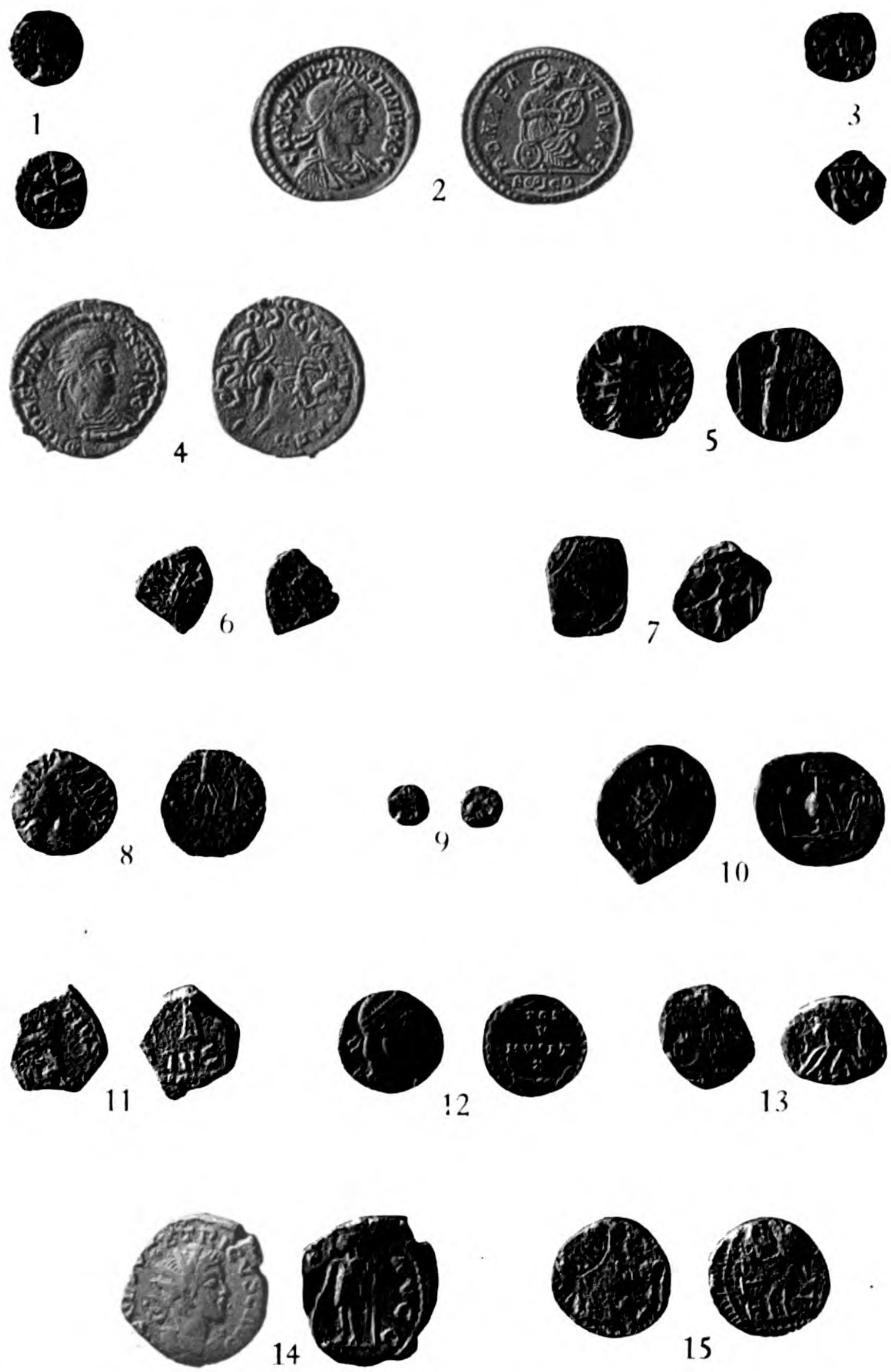
14. Sceatta—Men with crosses / Wolf-whorl. Own collection.
Cp. rev. of Pl. IV. 8.

15. Thrymsa—Head / Cross. *Warminster, Wilts.* British Museum.
Cp. obv. of Pl. IV. 9.

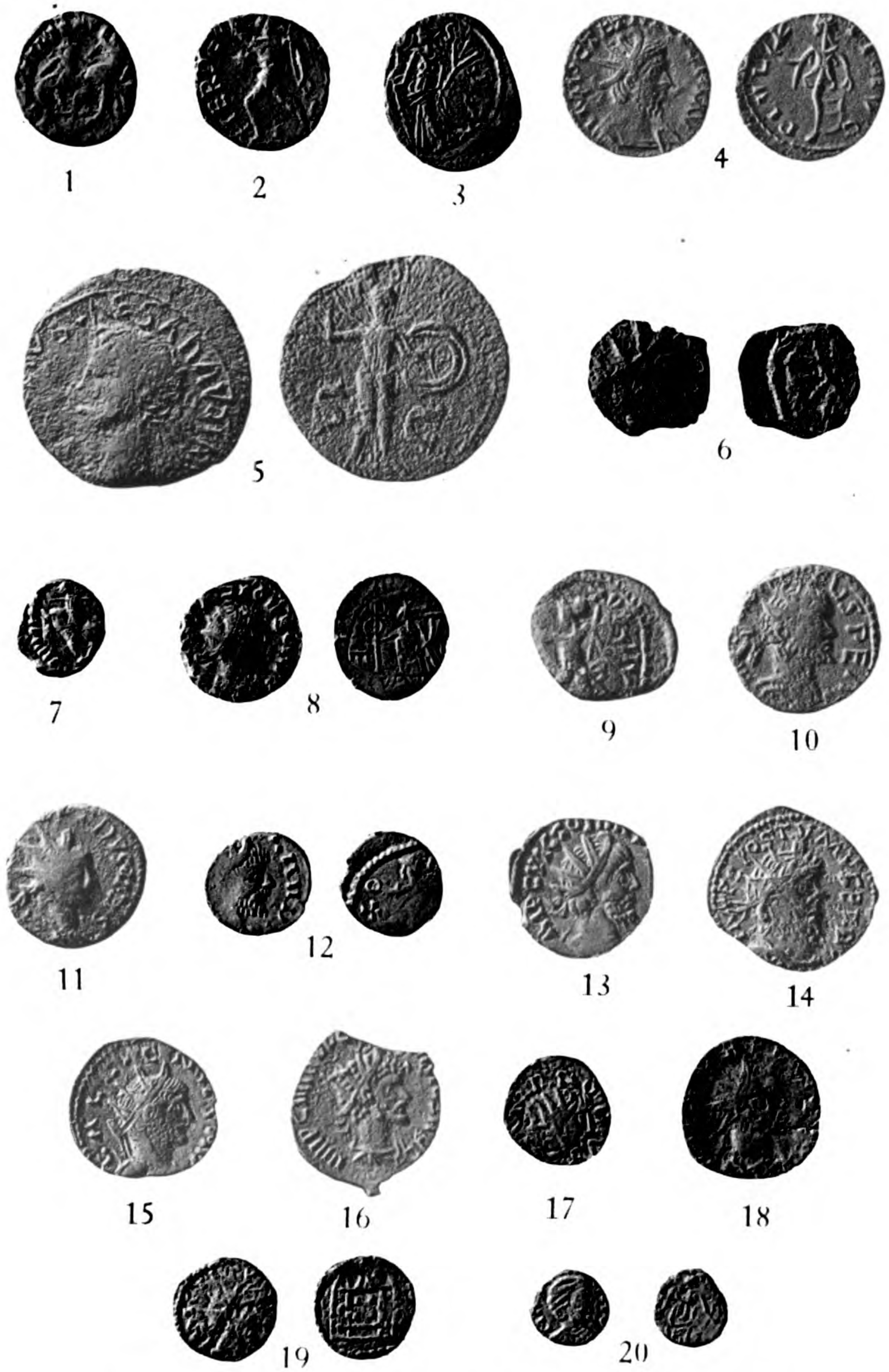
16. Sceatta—Facing head / Dragon. Own collection.
Cp. circles surrounding types on Pl. IV. 10.

17. Sceatta—Degraded head / Degraded standard. Own collection.
Cp. rev. of Pl. IV. 11.

18. Sceatta—Radiate head / Degraded standard. Own collection.
Cp. obv. of Pl. IV. 12.



MINIMUS FROM REDENHALL HOARD: 1. SEMI-BARBAROUS: 2.
EXAMPLES OF FLAN MANUFACTURE: 3–12.
STYLISTIC VARIETIES: 13–15.



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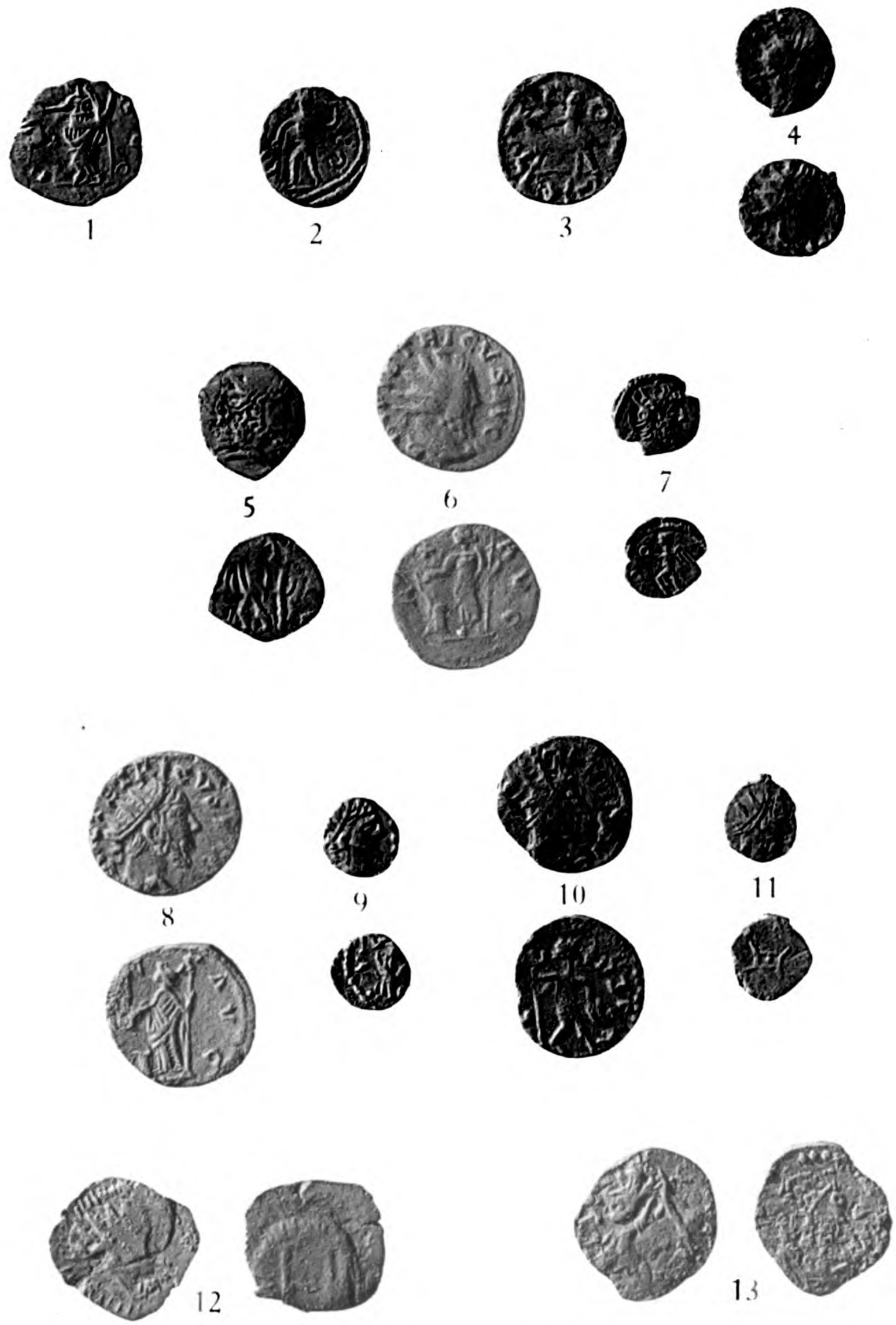
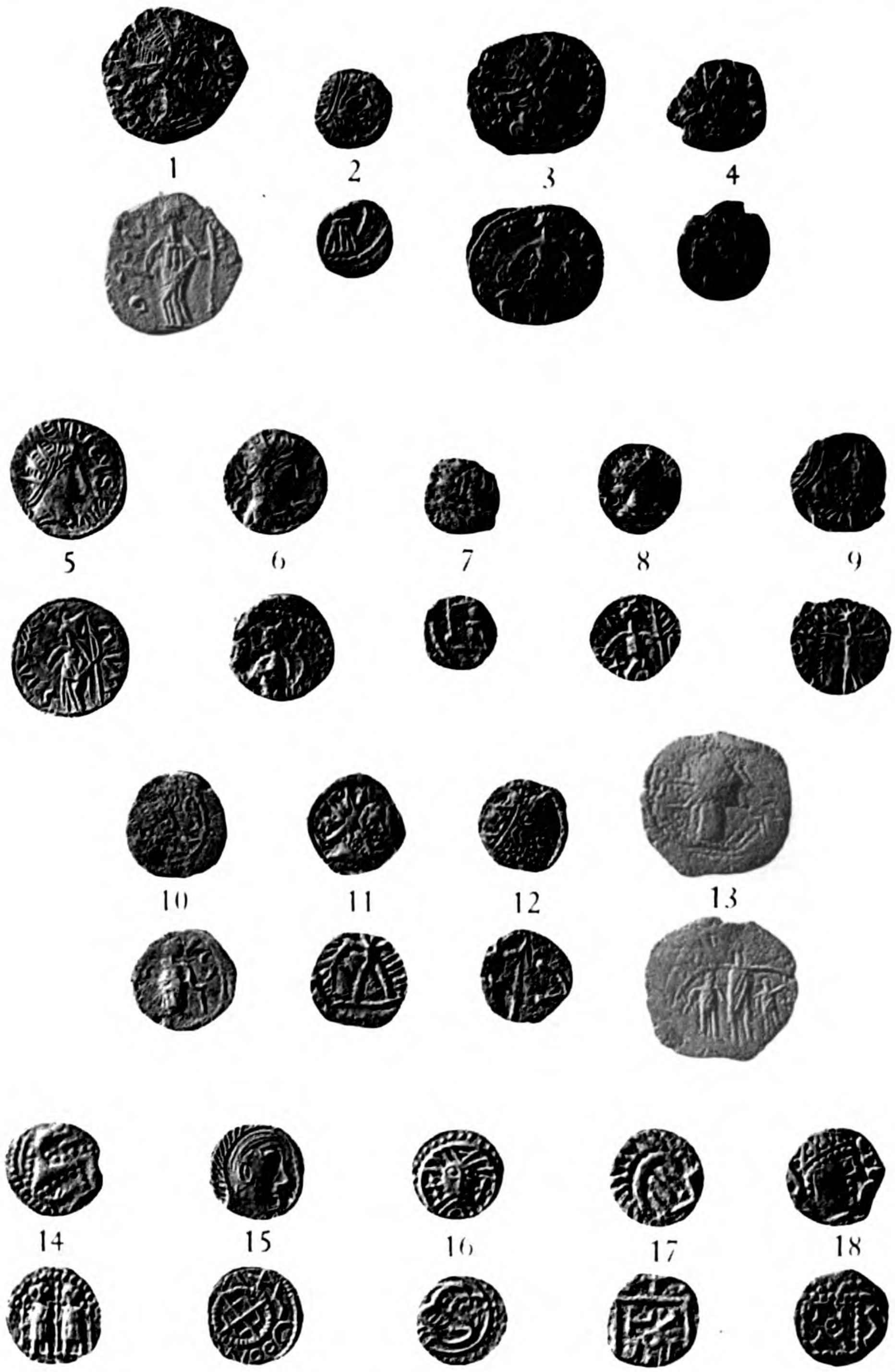


REVERSE TYPES: 1–5. GRADES OF COPIES: 6–11.
OVERSTRIKES: 12–13.



SUGGESTED CHRONOLOGICAL SEQUENCE: 1–13.
ANGLO-SAXON: 14–18.

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No. 113

NOTES ON THE EARLY COINAGE OF TRANSOXIANA

BY RICHARD N. FRYE

THE AMERICAN NUMISMATIC SOCIETY
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Introduction

THE history of the lands between the Oxus and Jaxartes Rivers in pre-Islamic times is still largely veiled, chiefly because of the paucity of literary sources. The coins, seals and archaeological monuments consequently have to bear more than their share of the burden in the reconstruction of the events of the past. Because of the lack of other aids and references, the identification and deciphering of the legends on the coins from this region have proved most difficult. Many coin types present unsolved problems for the numismatist, and much work remains to be done.

Fortunately the sands of Chinese Turkestan have revealed a wealth of archaeological material, well preserved by the dry climate, among which the manuscript fragments in various languages loom large in importance. It is not the place here to describe the treasures, both artistic and literary, brought back to European museums and libraries by Sir Aurel Stein, P. Pelliot, Gründwedel, Le Coq, and others in the first two decades before the first World War.[2] These finds also have a significance for the history of Western Turkestan, the Transoxiana of the ancients. First, however, it is necessary to survey briefly

[1] This study is an expanded section from my translation and notes to Narshakhī's *History of Bukhara*. I wish to express my gratitude to Dr. W. B. Henning, who read the first draft and made many valuable suggestions and additions, and who proposed the new reading of the legends on the coins of Bukhara (see below), and to Dr. George C. Miles, who gave valuable aid on bibliography, plates, and the final draft of this study. (*N.B.*—The full titles of journals are given in the first references to them; thereafter they are abbreviated. Numismatic journals which are well known, such as the *Revue Numismatique*, however, are abbreviated throughout the work.)

[2] *Cf.* A. von Le Coq, *Buried Treasures of Chinese Turkestan* (London, 1928), 25–28.

the linguistic picture of both Eastern and Western Turkestan before these lands came under the influence of the Turks, the former primarily in the eighth and ninth centuries, the latter in the eleventh and twelfth centuries of our era.

In the northern part of the Tarim basin of Chinese Turkestan the so-called "Tocharian" languages *A* and *B* were spoken. Much speculation on the identification of the people who spoke these languages has been made, but at the present we can only say that *A* was used by the people of Agni (modern Karashahr), while *B* was the language of Kucha.[3] Related to these two *centum* languages of the Indo-European family was the original language of the kingdom of Krorayina, which was situated between Lou-lan, Endere, and Niya in the eastern part of the Tarim Basin. This language is preserved only in a few words, survivals in the Indian Prakrit which later became the language of this area, and which is preserved in the Kharoṣṭhi manuscript fragments discovered by Sir Aurel Stein.[4] In the southern part of the Tarim Basin an Iranian tongue, Khotanese-Śaka, was employed. The town of Khotan was the center for this language, although a dialect of it has been found in manuscript fragments from the town of Maralbashi, to the northeast of Kashgar.[5] This language had close affinities to that of the Śaka invaders of India in the second century B.C., remains of which we find preserved on inscriptions in India from the second century A.D.[6] In addition to these indigenous languages, there were a number of "outside" tongues in use. Sogdian, an East Iranian language, was used by traders, colonists, and missionaries, the last composed of

[3] For the latest information see H. W. Bailey, "Recent Work in Tokharian," *Transactions of the Philological Society* (London, 1947), 126–153.

[4] T. Burrow, *The Language of the Kharoṣṭhi Documents from Chinese Turkestan* (Cambridge, 1937), viii.

[5] S. Konow, "Ein neuer Saka-Dialekt," *Sitzungsberichte der Preusslichen Akademie der Wissenschaften, Phil.-Hist. Klasse*, 1935, no. 20.

[6] Konow, *Khotansakische Grammatik* (Leipzig, 1941), 2.

Buddhists, Manichaeans, or Christians. The canonical language of the Manichaeans was Parthian, a Middle Persian tongue, remains of which were also found among the documents from Chinese Turkestan. Pahlevi fragments and texts in related dialects were also discovered. The dialects of these languages complicate the picture considerably. Syriac, and later Turkish and Tibetan materials, illustrate the veritable linguistic gold mine which Chinese Turkestan proved to be.

In Western Turkestan, in addition to Sogdian (and the Middle Persian dialects in Iran), there was a separate language in Khwārazm (modern Khiva), and another tongue spoken by the Hephtalites, who came from the east in the fifth century A.D. (*cf.* below). It is probable that all were Iranian languages, spoken in Transoxiana before the Turkish expansion. Here the sole archaeological expeditions have been Russian, and the reports have been few and singularly lacking in details.

We shall be concerned principally with the Khwārazmian coins and the "Sogdian" coins of Bukhara, although other types will be mentioned. For purposes of convenience the work has been divided into five sections: the earliest coinage of Transoxiana, the coins of Khwārazm, the coins of Bukhara, other Sogdian coins, and the early Islamic coins. Problems in the decipherment of the coins of Khwārazm, and a new reading for the Sogdian legend on the coins of Bukhara are presented. As addenda, the section on coinage of the Persian text of Narshakhī's *History of Bukhara*, based on new manuscripts, and a translation with notes, will clarify certain outstanding problems in the interpretation of this significant source.

Since the publication of J. de Morgan's summary of the pre-Islamic coinage of the Near East and Central Asia, no review of the coin types of Central Asia has appeared.[7] Much new

[7] J. de Morgan, *Manuel de Numismatique Orientale*, I (Paris, 1923–1936). This volume was compiled from notes after the death of the author and leaves much to be desired.

material has been discovered by archaeological expeditions in Soviet Central Asia since then. It is difficult, however, to obtain many of the Soviet accounts of numismatic discoveries, still more to make use of the incomplete descriptions and poor plates. Nevertheless, an attempt to bring together information on the various coin types of Transoxiana may prove of some use.

A discussion of all the coins is impossible, and only the Khwārazmian, and the so-called "Bukhār Khudāh" coins have been examined in any detail. The criterion for the discussion of any coin in this study is its provenance. It is of some significance for the history of Central Asia, I think, if Byzantine coins are found in sites in the Altai Mountains, but the study of these coins is obviously the province of the numismatist who specializes in Byzantine coins. Generalizations on the significance of finds of coins in Transoxiana are to be avoided, for this region was a crossroad of trade, and many foreign coins were certain to be found here. The identification of mint marks is almost hopeless, while similarities in design and execution frequently can be deceiving. The decipherment of many of the coins is hindered by our incomplete knowledge of Khwārazmian and other tongues of Central Asia. It is to be hoped that the linguist will cooperate with the numismatist in this work, and so aid in the reconstruction of the history of Transoxiana.

I. The Earliest Coinage

To my knowledge, no hoards of Achaemenid coins have been found in Transoxiana, a fact which would cast doubt on the assumption that coins were minted locally at this time. Since Bactria and Sogdiana were provinces of the Achaemenid empire, one would suppose that the coins of the Persian monarchs were current in Transoxiana, although we have no direct evidence.[8] There is also no evidence that coinage was

[8] E. Drouin, "Monnaies des grands Kouchans," *RN* (1896), 173, interprets

known here previously. It is improbable that Alexander the Great had coins struck in Transoxiana, for it was the eastern frontier of his empire which was insecurely held. According to C. Seltman, *Greek Coins* (London, 1933), 206, Alexander "usually left untouched the local system for marking magisterial responsibility that he happened to find already in operation." The Attic system, however, soon replaced the various older Asiatic systems.

Numismatics almost alone has reconstructed the Greco-Bactrian and Kushan king-lists. The coins of the early Seleucids are rarely found in Eastern Iran and Transoxiana, and it is only with the coins of the Greek rulers of Bactria that we are on relatively safe ground. Many Greco-Bactrian coins, beginning with the reign of Heliocles (died *ca.* 159 B.C.), and including many previously unknown issues, are said to have been found in the excavation of the great Ferghāna canal in Uzbekistan just before the late war.[9] It is interesting to note that the *earliest* coins found in this excavation, *i.e.*, in what was probably the northernmost province of the Greco-Bactrian kingdom, belong to Heliocles, the *last* of these monarchs to rule this territory before it was lost to nomad invaders.[10] At Panjikant, south of Samarkand, a new type of coin-medal of Antimachus I, struck in honor of his predecessor Euthydemos I (*ca.* 170 B.C.), was found. At a near-by site four obols of Euthydemos were uncovered together with copper coins having non-Greek legends.[11] This would serve to substantiate

the finding of several copper coins in Transoxiana, which have the figure of a king piercing an upright lion (Achaemenid style) upon them, as proof of the circulation of Achaemenid coins in Transoxiana long after the fall of the Achaemenid empire. There is not enough evidence at hand to substantiate this.

9 M. Voronets, "Arkheologicheskie issledovaniya 1937–1939 gg. v Uz. SSR," *Vestnik Drevnei Istorii*, 1940, fasc. 3–4, 338.

10 W. W. Tarn, *The Greeks in Bactria and India* (Cambridge, 1938), 279.

11 B. Kastalskii, "Neizdannaya greko-baktriiskaya tetradrakhma-medal Antimakha I, bitaya v chest Evtidema I," *VDI*, 1940, fasc. 3–4, 347.

the contention that Euthydemos ruled Sogdiana, and that he may have been originally satrap of that region before his conquests south of the Oxus River.[12] Many barbaric imitations of the coins of Euthydemos were also found in the vicinity of Samarkand.[13] The coin type of Euthydemos, then, served as a model for the later coinage of non-Greek rulers. These latter coins were perhaps the first coins minted in Sogdiana, although this is purely a surmise based on their provenance.[14] There are three types of these coins: the first with a Greek legend only, the second with mixed Greek and Aramaic (in fact early Sogdian, but designated as Aramaic by Allotte de la Fuÿe because of its origin), and the third with an all-Sogdian legend.[15] J. de Morgan tentatively assigned the first group to a date prior to the Yüeh-chih invasion of Transoxiana before 140 B.C.[16] The coins with mixed legends were assigned to the period of Yüeh-chih domination in Transoxiana, and the last series was said to be contemporary with the Indo-Śaka king Maues, whom de Morgan placed *ca.* 120–

[12] Tarn, *op. cit.*, 83. Many Greco-Bactrian coins were found in the mound of Tali Barzu in the Samarkand district, according to G. V. Grigor'ev, "Poseleniya drevnego Sogda," *Kratkie Soobshcheniya*, 6 (Moscow, 1940), 30.

[13] Kastalskii, *op. cit.*, 347; Tarn, *op. cit.*, 164, note 212.

[14] No mint marks of cities in Transoxiana have been identified on these coins, but their weight and the location of the majority of the sites where they were found led Allotte de la Fuÿe to assign them to the territory of ancient Sogdiana, modern Uzbekistan; *cf.* A. de la Fuÿe, "Monnaies incertaines de la Sogdiane et des contrées voisines," *RN*, quatrième série, 14 (1910), 329–333, and plates II and III.

[15] A. de la Fuÿe, *op. cit.*, Plate II, and the continuation of the same article in *RN*, 28 (1925), 31.

[16] J. de Morgan, *op. cit.*, 418. The invasion of the Yüeh-chih seems to have lasted over an extended period of time. According to Tarn, *op. cit.*, 276–277, they left their home in Kansu province, West China, *ca.* 176 B.C. Fifteen years later they were in Western Turkestan near Lake Issyk Kul, while in 128 B.C. they were on the Oxus.

90 B.C.[17] Since the Yüeh-chih (if we can assign this Chinese name to the nomad invaders who established themselves in Transoxiana after the fall of the Greco-Bactrian kingdom) copied the coinage of their predecessors, one would suppose that they also retained their mint towns. This is to assume that there were mint town(s) of the Greco-Bactrian sovereigns north of the Oxus River. It is improbable that the Yüeh-chih had a numismatic tradition before they invaded the West, hence imitations of the local coinage were inevitable.[18] The exact relation of the Kushans to the Yüeh-chih cannot be discussed here. The accepted view is that the former were one of the tribes or sub-divisions of the Yüeh-chih who gained ascendancy over the others. The attempts to equate the name *Kushan* with the name *Yüeh-chih* have not been convincing.[19] In any case the Kushan empire, with Kanishka as the best-known monarch, succeeded the Greco-Bactrian state as the dominant power in Transoxiana and modern Afghanistan.

Kushan coins have been found in Soviet Central Asia in greater numbers than Greco-Bactrian coins, and small hoards have been uncovered in various sites, some widely separated. In the excavation of Baikand, near Bukhara, a large quantity of Kushan coins was discovered in a preliminary survey.[20]

17 J. de Morgan, *op. cit.*, 418.

18 The coins of Hermaios, the last Greco-Bactrian king of Kabul, with Chinese characters, have been explained by Tarn, *op. cit.*, 338. Professor Lien-sheng Yang of the Harvard-Yenching Institute proposes a different reading of the Chinese characters on these coins, as reproduced in J. de Morgan, *op. cit.*, 363; 銅錢重廿四銖, *t'ung-ch'ien chung nien ssŭ shu*, "copper-coin [weight] twenty-four *shu.*" The stylized characters on the other coin reproduced on the same page are read by Professor Yang as 六銖錢, liu shu ch'ien, "coin [weight] six *shu.*"

19 *Cf.* R. Shafer, "Linguistics in History," *Journal of the American Oriental Society*, 67 (1947), 296–305.

20 A. Yu. Yakubovskii, "Zarafshanskaya arkheologicheskaya ekspeditsiya 1939 g," *Kratkie Soobshcheniya*, 4 (Moscow, 1940), 51, and his "Zarafshanskaya ekspeditsiya 1939 g," *Trudy Otdela Vostoka*, 2 (Leningrad, 1940), 63.

The mound of Tali Barzu, in the Zarafshān River valley near Samarkand, also yielded many Kushan coins in the level above the Greco-Bactrian stratum.[21] In various sites of ancient Khwārazm (modern Khiva), many Kushan coins have been found, as well as Kushan coins overstruck with the so-called "Khwārazmian" sign, an S.[22] The discovery of Kushan coins in Khwārazm, and in other scattered sites in Central Asia, however, need not signify the existence of a great Kushan confederacy, or of a northern and southern Kushan dynasty, as Tolstov has suggested.[23] One needs more and fuller evidence for such a conclusion. Byzantine coins, and coins from the Bosphorean kingdom of Southern Russia, have been found as far east as the Altai Mountains, where there hardly could have been any political influence.[24] Tolstov has studied the pre-Islamic Central Asian coinage and has come to the conclusion that the Kushan, Khwārazmian and so-called "Heraya" coins are related, which implies a political-cultural relation. Later, Tolstov reported that the finds of coins at Toprak-kala in the territory of ancient Khwārazm permitted him to say that the coins of Heraya were a branch of the Khwārazmian mintage.[25] The last-named coins have been known for a long time, but their identification has been a matter of dispute.[26] Although these

[21] Grigor'ev, "Gorodishche Tali-barzu," *Trudy Otdela Vostoka*, 2 (Leningrad, 1940), 96.

[22] S. P. Tolstov, "Novye materialy po istorii Khorezma," *Vestnik Drevnei Istorii*, 1946, part 1, 74.

[23] S. P. Tolstov in a review of A. N. Zograf, *Monety Geraya* (Tashkent, 1937), 36 pp., in *VDI*, 1939, part 2, 119.

[24] S. Kiselev, "Nakhodka antichnykh i bizantiiskikh monet na Altae," *VDI*, 1940, parts 3–4, 360–362.

[25] Tolstov, "Novye materialy po istorii Khorezma," *op. cit.*, 78. *Cf.* below the discussion of Khwārazmian coins.

[26] *Cf.* P. Gardner, *The Coins of the Greek and Scythic Kings of Bactria and India in the British Museum* (London, 1886), xlvii, 116, and plate XXIV; A. Cunningham, "Coins of the Indo-Scythian King Miaüs, or Heraüs,"

coins were first found in Afghanistan, the Soviet scholar thinks they were struck at a mint, or mints, to the north of the Oxus River, primarily because of their resemblance to the coins of Khwārazm.[27] The name of this ruler has also been read as Miaos, and Tarn goes further when he says that Miaos was the first chieftain of the Yüeh-chih to issue coins on the model of the Greco-Bactrians.[28] He is dated *ca.* 50 B.C., and his coins are attributed to the mint at Kapisa (Begram).[29] Tarn's analysis of these coins would contradict the thesis of Tolstov, which is based solely on stylistic similarities.

It is not the purpose of the present study to discuss the problems of Kushan coinage, which are obscure and complicated. The identification of mint towns from letters and signs found on these coins is still a matter of mere guesswork and unacceptable as a basis for further study. Many Kushan coins have been found north of the Oxus River, and one would assume the existence of mints in this area rather than the importation of all the coins from the south. Further complications arise from a disputed chronology of the Kushan rulers. Recently R. Ghirshman has proposed a new chronology on the assumption that there were four dynasties: the early Kushans, the house of Kanishka and his successors, the later Kushans, and the Kidārites (the last of the Kushans), named after their chieftain. The key date of the accession of Kanishka is placed

Numismatic Chronicle, third series, 8 (1888), 47–58; Cunningham, "Coins of the Sakas," *NC*, third series, 10 (1890), 112–115; Allotte de la Fuÿe, "Monnaies incertaines de la Sogdiane II," *RN* (1925), 36–41; S. P. Tolstov, "K voprosu o monetakh Geraya," *VDI* (1939), 2, 114–117. Tolstov identifies this ruler as a Kushan governor (*yabgu*) of Sogdiana in his "Monety drevnego Khorezma," *VDI*, 1938, part 4 (5), 122, 128.

27 Tolstov, "K voprosu o monetakh Geraya," *op. cit.*, 118.

28 Tarn, *op. cit.*, 305. This view is also held by R. Ghirshman, *Bégram, recherches archéologiques et historiques sur les Kouchans* (Cairo, 1946), 109, 185.

29 *Ibid.*, 506.

at 144 A.D. by Ghirshman.[30] The second dynasty lasted from 144 to 242 A.D., when Shāpūr I, the Sasanian ruler, put an end to Kushan independence.[31] The arguments advanced by Ghirshman are convincing, but the lengths of rule of various Kushan potentates, whose existence is known only by their coins, still present many problems.

Herzfeld has attempted to identify the "mint" marks on some of the late Kushan gold coins. One coin has several letters in Parsik script which Herzfeld reads as Smə or Samarkand.[32] This is only a conjecture for which there is no proof. Unfortunately, the history of Transoxiana, unlike that of Iran, presents no continuity of minting down to the Umayyad period. It is also a surmise that some coins of Pērūz, brother of Shāpūr I, were minted in Samarkand from *ca.* 242 to 252 A.D.[33] Identifications of the coins of the later Kushans, both for time and place, are based primarily on artistic and technical resemblances to Parthian or Sasanian types. On this basis a brief summary of the coinage of Bactria and Transoxiana, in the second century A.D., has been made by Vasmer.[34]

The involved question of the circulation and disappearance of gold coins, and their relation to the silver issues, is beyond the scope of the present study. From Islamic sources we learn that Transoxiana was rich in both gold and silver mines.[35]

30 R. Ghirshman, "Fouilles de Bégram," *Journal Asiatique* (1943–1945), 68, and his *Bégram*, 106.

31 Ghirshman, "Fouilles," 63, 69, and his *Bégram*, 107, 163.

32 E. Herzfeld, *Kushano-Sasanian Coins*, Memoirs of the Archaeological Survey of India, no. 38 (Calcutta, 1930), 14–15.

33 R. Vasmer, "Zur Münzkunde von Baktrien in 3. Jahrhundert n. Chr.," *Zeitschrift für Numismatik*, 42 (1932), 52.

34 *Ibid.*

35 W. Barthold, *Turkestan Down to the Mongol Invasion* (London, 1928), 164, 169; V. Minorsky, *Ḥudūd al-ʿĀlam* (London, 1937), Index 522; G. Le Strange, *The Geographical Part of the Nuzhat-al-Qulūb* (London, 1919), 193.

These mines were probably known and exploited in antiquity, although we have no direct evidence. There is no reason to assume that the Kushans were cut off from a supply of silver, but the gold coinage of their contemporaries, the Romans, may well have exerted a strong influence on them. It is well known that gold, as a metal of coinage for Rome, came into prominence only at the end of the Republic and the early years of the Empire.[36] The prestige of Rome, and the brisk trade in the first centuries of our era, must have had some influence on other currencies. The recent discovery of a Roman trading colony on the *east* coast of India indicates the extent and importance of the Oriental trade of the Roman Empire.[37] The fact that we have no Parthian gold coins may be explained by the hostility which existed between the rulers of Iran and their eastern and western neighbors. The Kushans and Romans had a mutual enemy, and mutual interests in trade, so it is not surprising to find both minting gold while the Parthians maintained a silver standard.[38]

The merging of the late Kushan coins with the issues of the Sasanian governors of the east, the so-called Kushano-Sasanian coins, ushers in a new period. The rare Sasanian *aurei* were probably minted in Khurāsān or Transoxiana after the conquests of the new Iranian dynasty in this area.[39] At the advent of the Sasanian dynasty, *ca.* 225 A.D., Transoxiana was probably divided into a number of small principalities. The only literary sources for a history of this period are a few statements in the Chinese dynastic histories, frequently based on

[36] H. Mattingly, *Roman Coins* (London, 1928), 18, 25, 121.

[37] R. E. M. Wheeler, A. Gosh and Krishna Deva, "Arikamedu: an Indo-Roman Trading-station on the East Coast of India," *Ancient India*, no. 2 (1946), 17–124.

[38] G. Bataille, "Notes sur la numismatique des Koushans," *Aréthuse*, fascicule 18 (1928), 25.

[39] Herzfeld, *op. cit.*, 1.

hearsay.[40] The numismatic picture likewise is obscure, but already in the third century A.D. coin types began to change from the Parthian-Kushan "thick" to the Sasanian "thin" type.[41]

The coins of the last Kushan dynasty, the Kidārites, are based upon Sasanian models. Our knowledge of the Kidārites is still scanty, and much rests upon uncertain evidence. It seems that the name is derived from the first ruler, Kidāra, who consolidated power north of the Hindu Kush Mountains *ca.* 350 A.D.[42] The date as well as the course of events is a matter of dispute, and the reconstruction of Marquart is the only extensive study of the problem.[43] According to him, the Kidārites ruled over most of the area east of the Caspian Sea, and the expeditions of the Sasanians against them took place in this area. The base of operations of the Persian army was Gurgān at the southeast corner of the Caspian.[44] Marquart, following Chinese sources, identified the capital of the Kidārites as the town of Balkhān in the ancient bed of the Oxus River, which once flowed to the Caspian Sea.[45] The son of Kidāra, and presumably his successor, after suffering a de-

[40] Historical sources are lacking, but later Chinese sources give us an idea of the political situation in earlier times; *cf.* E. Chavannes, *Documents sur les Tou-Kiue* (*Turcs*) *occidentaux* (St. Petersburg, 1903), 134.

[41] This does not refer to copper coins, which hardly could be made as thin as the Sasanian silver pieces. It is true that several "thick" types are attributed to the Hephtalites, although their coinage was, on the whole, similar to the Sasanian; *cf.* J. de Morgan, *op. cit.*, 449–452.

[42] Ghirshman, "Fouilles," *op. cit.*, 69.

[43] J. Marquart, "Ērānšahr," *Abhandlungen der Königl. Gesell. der Wissenschaften zu Göttingen*, Phil.-Hist. Klasse, 1901, 55–58; *cf.* also his "Kultur- und sprachgeschichtliche Analekten," *Ungarische Jahrbücher*, 9 (1929), 97.

[44] *Ērānšahr*, 57, note.

[45] *Ibid.*, 55. He uses the antiquated translation of E. Specht, "Études sur l'Asie Centrale," *Journal Asiatique* (1883), 328, which is based in turn on the translations of A. Rémusat and Stanislas Julien.

feat at the hands of the Sasanian forces, led his people over the Hindu Kush Mountains to invade India. Marquart dated this event shortly after 468 A.D., in the time of Pērūz, the Sasanian monarch who secured the throne with the aid of the Hephtalites.[46] This hypothesis raises a number of problems. Similar, but with convincing variations, is the thesis of M. F. C. Martin, a numismatist, who advanced the theory that the Kidārites separated into two branches under pressure from the northern nomads, the Chionites.[47] One group migrated westward toward the Caspian, while the other branch moved south over the Hindu Kush. The leader of the second group was Kidāra himself. Martin places the date of the migration a century earlier than Marquart, *ca.* 350 A.D., which coincides with the date proposed by Ghirshman.[48] No references to Kidārite coins found in excavations in Soviet Central Asia have come to my attention. One would suppose that their rule did not extend so far north, or if it did it may have been transitory. The coins struck by the Kidārites in Afghanistan and India represent a separate problem. Likewise, the question of the relations of the Kidārites with the Chionites, and the Sasanians, involves a study of literary sources as well as of the coins.[49]

The Hephtalite invasions of the fifth century A.D. introduce a new element into the history of Transoxiana, and they present one of the most enigmatic problems of this history.

46 *Ibid.*, 58; *cf.* A. Christensen, *L'Iran sous les Sassanides*, 2nd ed. (Copenhagen, 1944), 293. On the name of the son, *κούγχαν*=*qūn qān*, *cf.* Marquart, *Über das Volkstum der Komanen* (Leipzig, 1914), 70.

47 M. F. C. Martin, "Coins of the Kidāra and the Little Kushāns," *Journal of the Royal Asiatic Society of Bengal*, Numismatic Supplement no. XLVII (1938), 23–50, 5 plates.

48 *Ibid.*, 32; Ghirshman, "Fouilles," *op. cit.*, 69.

49 The Greek, Syriac, and Middle Persian sources are very confusing, and the summary of the history of this period by O. Wesendonk, "Kūšān, Chioniten und Hephthaliten," *Klio*, 26 (1933), 336–346, does little to clarify the situation.

Mention of the Hephtalites is found in Chinese, Greek, Syriac and Arabic sources, and their coins are found in most of the large Oriental collections. The term *White Huns* was used by the Greek authors to designate the Hephtalites, but it was also applied to other nomads of Central Asia, and the historical picture is consequently very confusing. Manuscript fragments, with the same script as that on the coins of the Hephtalites, have been found in Chinese Turkestan. At least three such fragments were brought from Turfan by Le Coq and preserved in Berlin until the late war.[50] This script is a very corrupt form of the Greek alphabet used by the Greco-Bactrian rulers and their successors, the Kushans. The language has remained undeciphered, although it is probably an Iranian tongue closely related to Sogdian. The name *Hephtalite*, adopted from the name of the ruling family, can be compared with a Sogdian plural * *Heβtalị̄t* (singular * *Heβtalak*), and the name of one of the kings, *Aχšōndār* (not *Aχšunwār*), may be compared with Sogdian *'χš'wnd'r* "king."[51]

Most of the Hephtalite coins have an identifying sign  which might have served as a coat of arms of the royal family. Whether this symbol was used by all the Hephtalites, by one tribe, or by one dynasty, is unknown. It is not found on all coins classified as "Hephtalite," but it is frequent enough for us to assume an extensive use of it over a long period of time. The historical picture, the relations of Hephtalites with conquered peoples, tributaries, and the like, is almost a *tabula rasa* in history.

Again the works of Marquart are the best guide for what little we know of these people.[52] The date of the Hephtalite

[50] A. von Le Coq, "Köktürkisches aus Turfan," *Sitzungsber. der Preuss. Akad. der Wiss.*, 1909, 1049–1061; also F. W. Thomas, "A Tokhari MS," *JAOS*, 64 (1944), 1–3, one plate.

[51] W. B. Henning, "Neue Materialen zur Geschichte des Manichaismus," *ZDMG*, 90 (1936), 17, note 2.

[52] Especially his *Wehrot und Arang* (Leiden, 1938), also "Über das Volks-

invasion of Transoxiana is uncertain, but it probably lasted a number of years, beginning *ca.* 400 A.D. The interrelations of the names *Hephtalites*, *Chionites*, and *Kadisäer* are obscure, but all were invaders from Central Asia. According to Marquart the last-named were a branch of the Hephtalites who ruled in the vicinity of Herat.[53] Another branch of the Hephtalites may have been the Zāvuli tribe which gave the name to the province of Zābulistān (in Islamic sources), the modern Ghazna in Afghanistan.[54] The White Huns in the Caucasus area present another problem. The ruler of the White Huns, Grumbates, who aided Shāpūr in his siege of the city of Āmida (modern Diyarbakr) held by the Romans, may have been ruler of the Caucasian branch only.[55] The Hephtalites certainly ruled over Transoxiana, for later Arabic geographers referred to the land between the two rivers as *Hayāṭilah* (Hephtalites).[56] Yet finds of Hephtalite coins there have been rare, which leads one to suspect that the Hephtalites followed a policy similar to that of the Yüeh-chih, and for a time left the local coinage alone. Although the wars of the Hephtalites with the Sasanians occurred for the most part in the sixth century A.D., the northern invaders would seem to have been in Transoxiana a century earlier.[57] Solutions to the many prob-

tum der Komanen," *Abhandlungen der Königl. Gesellschaft der Wissenschaften zu Göttingen*, Phil.-Hist. Klasse, 13 (1914), 70–75. Some of Marquart's identifications have been questioned by P. Pelliot, "A propos des Comans," *JA* (1920), 140.

[53] Marquart, *Ērānšahr*, 77–78. The Armenian form of the name is Katišk'.

[54] Marquart and J. M. de Groot, "Das Reich Zābul und der Gott Žūn vom 6–9 Jahrhundert," *Festschrift Eduard Sachau* (Berlin, 1915), 252.

[55] Wesendonk, *op. cit.*, 342.

[56] G. Le Strange, *Lands of the Eastern Caliphate* (Cambridge, 1905), 433.

[57] A. Christensen, *L'Iran sous les Sassanides* (Copenhagen, 1944), 289, note 5, asserts that the Hephtalites did not reach the borders of Iran until the middle of the fifth century.

lems of Hephtalite and related coins await the results of archaeological excavations in Soviet Central Asia and Afghanistan.

II. The Coins of Khwārazm

In the period just before, during, and after the Muslim invasions we are on firmer ground, primarily because of the valuable Arabic sources. Two series of coins have been investigated, the Khwārazmian coins, mentioned above, and the so-called "Bukhār Khudāh" coins. According to Tolstov, in 1937 there were forty-four Khwārazmian coins in the Hermitage Museum in Leningrad, and 195 (including fragments) found by the first archaeological expedition to the territory of ancient Khwārazm. By 1945 the number had risen to almost a thousand.[58] A few odd pieces were to be found in collections outside Russia. Tolstov gives a detailed summary of past work on the Khwārazmian coins, which indicates that they have been known as long ago as 1850.[59] It was only in 1870 that E. Thomas published and studied five of these coins, casts of which had been sent him from St. Petersburg.[60] It is unnecessary to repeat the various suggestions of Thomas, Drouin, and Rapson on the attribution of these coins. All of the coins preserved in St. Petersburg had been found in Russia proper (province of Perm), hence speculation on their provenance was varied.[61] It is certain now that they represent the coinage of pre-Islamic Khwārazm. Legible plates of two of the coins were published by Markov in 1892.[62]

[58] S. P. Tolstov, "K istorii Khorezmiiskikh Siyavushidov," *Izvestiya Akademii Nauk*, seriya istorii i filosofii, 2 (1945), 275.

[59] Tolstov, "Monety shakhov Drevnego Khorezma i drevnekhorezmiiskii alfabit," *VDI* (1938), no. 4 (5), 121.

[60] E. Thomas, "Indo-Parthian Coins," *Journal of the Royal Asiatic Society* (1869), 503–521, reprinted in *NC* (1870), 139–163.

[61] E. J. Rapson, "On the Attribution of Certain Silver Coins of Sassanian Fabric," *NC* (1896), 249.

[62] A. Markov, "Neizdannyya Arsakidskiya monety," *Zapiski Vostochnago*

The articles of Thomas (note 60), of Allotte de la Fuÿe,[63] and of Tolstov, are the principal sources of information on these coins, and they alone need concern us here. Unfortunately the reproductions of the coins given by Tolstov are so poor that one is unable to use them.

Before discussing the coins, a few words on our present state of knowledge about the Khwārazmian language may be in order.[64] The details of the knowledge of the Khwārazmian language among the Muslim literati were summarized for the first time by Zeki Validi.[65] A few Khwārazmian words were known from the Muslim writers, primarily al-Bīrūnī, but all literature in the Khwārazmian language has perished without a trace. Zeki Validi found a number of manuscripts in Istanbul of juridical contents with Khwārazmian words and sentences.[66] Dr. W. B. Henning studied the material which Zeki Validi had found, and gave the first brief analysis of the Khwārazmian language.[67] This material was adapted, and somewhat expanded on the basis of additional manuscripts in Russian collections, by Freiman.[68] The language is closer to

Otdeleniya Imp. Russkago Arkheologicheskago Obshchestva, 6 (1891), 301, plate IV, nos. 32 and 33.

63 A. de la Fuÿe, "Monnaies incertaines de la Sogdiane," *RN*, quatrième série, 29 (1926), 141–151, plate VI (VII), 14, 15, and 17.

64 For the history of Khwārazm in ancient times *cf.* W. W. Tarn, *The Greeks in Bactria and India*, 293–294, 478–480, and K. Inostrantsev, "O do-musulmanskoi kulture Khivinskago Oazisa," *Zhurnal Ministerstva Narodnago Prosveshcheniya* (St. Petersburg, February, 1911), 284–318.

65 A. Zeki Validi, "Über die Sprache und Kultur der Alten Chwarezmier," *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 90 (1936), *27–30.

66 *Ibid.*, *27–28, also his "Ḫwārezmische Sätze in einem arabischen *Fiqh*-Werke," *Islamica*, 3 (1927), 190–213.

67 W. B. Henning, "Über die Sprache der Chvarezmier," *ZDMG*, 90 (1936), *30–34.

68 A. Freiman, "Khorezmiiskii Yazyk," *Zapiski Instituta Vostokovedeniya*, 7 (1939), 306–319. In the same journal, pp. 79–91, S. L. Volin has an article,

Sogdian and Ossetic than to other Iranian tongues; hence parallels with these two languages must be utilized in an attempt to decipher the literary remains and the coins. It is also possible that the inscriptions on some of the silver objects found in Russia, but of Central Asian origin, are in Khwārazmian.[69] Since the literary Khwārazmian remains are written in Arabic characters the only paleographical materials we have are the coins, the silver bowls, etc. mentioned above, and the remains in the old Sogdian alphabet for comparison.[70]

To pass on to the coins themselves, Tolstov has classified the coins into two main groups, one with debased Greek and Khwārazmian legends, and the other with Khwārazmian only.[71] Each group is further subdivided into three sections. The first section is composed of coins which are not found, to my knowledge, in any collection outside of Russia.[72] Section, or type, A is composed of tetradrachmae with the figure of a bearded ruler facing right. On the reverse is a horseman in the Parthian style, with the Khwārazmian sign , which is found on coins of the other types as well. The sign is related to the mark on the Kushan coins, especially of Huvishka, also on the coins of Heraya.[73] Above the sign is a debased Greek

"Novyi istochnik dlya izucheniya Khorezmiiskogo yazyka," similar to, but more expanded than, the article of Zeki Validi.

69 Ya. I. Smirnov, *Vostochnoye Serebro* (St. Petersburg, 1909), Plate XIX, CXIV and others.

70 The ancient (non-Buddhist) Sogdian script is represented in the ancient letters found by Sir Aurel Stein in Tun-huang, pub. by Hans Reichelt, *Die Sogdischen Handschriftenreste des Britischen Museums*, 2 Teil (Heidelberg, 1931), and a few fragments of inscriptions; *cf.* A. Freiman, "Drevneishaya Sogdiiskaya Nadpis," *VDI* (1939), part 3, 135–136.

71 Tolstov, "Monety shakhov Drevnego Khorezma," *op. cit.*, 125.

72 The reproductions which Tolstov gives on p. 126 are poor. One of these coins was reproduced by E. Thomas, "Parthian and Indo-Sassanian Coins," *JRAS* (1883), 81.

73 Tolstov, *op. cit.*, 124, 128.

inscription, and at the bottom a Khwārazmian legend. The Greek is said to be a debased form of the word ΒΑΣΙΛΕΩ(Σ), but the photographs are too poor for checking.[74] The second section of the first group, A, is composed of small, thick copper coins poorly preserved. The third group, α, copper coins, is distinguished by a sign in the form of a cross. Nowhere, to my knowledge, except in Tolstov's article, are the coins of the last two types represented.[75] Their relation to the silver issues, or to each other, is a matter of speculation. Tolstov suggests that coins of type α might be the coins of lower Khwārazm (perhaps due to their provenance?).[76]

The second class of coins is later in date, and more of these were found than of the first group. Both silver drachmae and copper coins are found, all with Khwārazmian legends. They are classified by Tolstov by the type of headdress, and by the position of the legends. A subgroup, B 1, has an Arabic word فضل just behind the rider on the reverse. On the coins of the British Museum and The American Numismatic Society (FRONTISPIECE, figs. 3 and 4) it is clearly الفضل. Tolstov claims that this dates the coins from the time of the governor of Khurāsān, al-Faḍl ibn Yaḥyā al-Barmakī, 787–795.[77] Another group of coins β are of a crude copper type with a large sign Ψ on the reverse, and a crude portrait of a ruler on the obverse (Plate III, p. 132 of Tolstov's article).

It is not possible here to discuss the various readings proposed by Tolstov. He has a large quantity of coins of all types which cannot be checked, and one must rely on his transcriptions. The first legend which Tolstov studied was a cursive legend on the latest Khwārazmian coins with the Arabic word on the reverse. The cursive Khwārazmian legend on the

[74] *Ibid.*, 127.

[75] One of the class α coins of Tolstov's classification was reproduced in W. Tiesenhausen, *Notice sur une collection de monnaies orientales de M. le Comte S. Stroganoff* (St. Petersburg, 1880), 8, no. 16.

[76] Tolstov, *op. cit.*, 129. [77] *Ibid.*, 131.

obverse side, to the right of the ruler's face, is, unfortunately, different from the cursive legend on the back of a similar coin from the British Museum (FRONT., fig. 3). Tolstov reads the legend *š'wšpr*, which is the ruler mentioned by al-Bīrūnī as شاوشفر and in the Chinese sources as *shao shih-fên* 稍施芬.[78] Several remarks may be made. First, the form of the name as it appears in the text of al-Bīrūnī is open to question. There are a number of manuscripts of al-Bīrūnī's work which were not available to Sachau, one of the most important of which is in the 'Umūmī library in Istanbul. (*Cf.* C. Brockelmann, *Geschichte der arabischen Literatur*, erster Supplementband (Leiden, 1937), 872.) These manuscripts should be consulted. It is difficult to believe that even then the original form of the name can be determined, since the Khwārazmian language is so little known. Second, the Chinese name was pronounced *ṣau śię p'i̯uən* in ancient times (Karlgren's reconstruction). The final syllable would be somewhat difficult to reconcile with the Iranian form of the name. Furthermore, without legible reproductions it is impossible to check Tolstov's reading. His reading of the first four letters of the obverse as *qrṣd*, whom he identifies as the brother of the Khwārazmshah in the time of Qutaiba, is hardly acceptable. The Khwārazmian coins which we have at our disposal all belong to the same class. Tolstov suggests that the cursive Khwārazmian legend on the obverse, which he copies, is the name of the predecessor of the *Šāūšafar*, in the work of al-Bīrūnī—ترکسبثه or '*Abdallāh*. This is mere surmise and a continuation of Tolstov's method of seeking to make the coin legends fit the names of Khwārazmian rulers given by al-Bīrūnī. Tolstov must have used a manuscript in the Soviet

[78] *Ibid.*, 134–135. E. Chavannes in his "Notes additionelles sur les Toukiue (Turcs) occidentaux," *T'oung Pao*, 5 (1904), 92, quotes a passage from the *Ts'ê-fu yüan-kuei*, 册府元龜, vol. 971, which tells of tributary envoys from three states, including Khwārazm, of which the ruler's name is given as Shao-fên. Chavannes has identified this ruler with the Shāūšafar of al-Bīrūnī.

Union for this form of the name. Sachau (p. 36) has the form ترکسباثه with a variant ترکسته. All forms are to be regarded with suspicion. I am unable to propose a reading for the cursive legend on these coins (FRONT., figs. 2, 3, 4), which on no. 2 looks more like . On the reverse, around the figure of the horseman is a legend which Tolstov read as *MR' MLK'*, two Aramaic ideograms for "lord" and "shah" (FRONT., fig. 1, rev.).[79] The former (*MR'Y*) occurs frequently in the Sogdian fragments from Mug Mountain.[80] There is a precedent in Sogdian for two titles used together, in much the same fashion as our "Mister President," and that is the *βγω γωβω* of the fragments from Mug Mountain. Perhaps the Khwārazmian titles are used in the same manner, but it might be that the first three letters represent the name of the kingdom, or place of mintage, as in the coins of Bukhara (*cf.* below). The princes of the small Central Asian states had different titles.[81] At first I thought of the possibility of Merv, O. P. *Marguš*, but even on historical grounds this was unacceptable, since it was a province of the Sasanian empire governed by a *marzpān*. The ruler of Khwārazm, on the other hand, did hold the title of Shāh according to the letter of Tansar, high priest of Iran in the time of Ardašīr I.[82] It is not certain that the first letter is the same as the fourth, an *m*. The reading *MLK'*, however, is convincing. The final word of the legend was read as *χwrzm* or Khwārazm by Tolstov.[83] The first two letters were compared with the Book Pahlevi ligature, while the rest were read as ancient Sogdian. This

[79] Tolstov, *op. cit.*, 133.

[80] A. Freiman, *Sogdiiskii Sbornik* (Leningrad, 1934), 45 *et passim*.

[81] *E.g.*, the *Tirmidh Shāh*, the *Afshīn* of *Usrūshana*, the *Shār* of *Gharchistān*, etc. *Cf.* Christensen, *op. cit.*, 501.

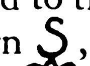
[82] Ibn Isfandiyār, *Ta'rīkh-i-Ṭabaristān*, ed. 'Abbās Iqbāl (Teheran, 1942), 18.

[83] Tolstov, *op. cit.*, 137.

ignores the fact that in all Iranian languages the name of the country has a long *ā* in the first syllable, which should also be represented in Khwārazmian.[84] I can propose no alternate reading, and it would seem that more knowledge of the language is necessary before further work on the coins be attempted.

In regard to the small characters on the reverse of one of the coins, just behind the rider (FRONT., fig. 2, rev.), in a letter dated 23 October 1947, John Walker, of the Department of Coins and Medals of the British Museum, wrote, "The letters which Gen. Cunningham read as IX='Ιησοῦς Χριστός, are really part of an Arabic legend upside down, which I can read as: الابرد, *i.e. al-Abrad* (?), or some such name."

On the other coins Tolstov read *'bdwl MLK'*, "Abdallāh Shāh," *Afrīgh* (the name of the ruling dynasty, according to al-Bīrūnī), and *šywš*, the شاوش of al-Bīrūnī.[85] On the basis of the alphabet on the coins, several silver bowls in the Hermitage museum are identified as Khwārazmian. The inscriptions on them are crude, and at least one is in Sogdian.[86] Much work remains to be done in this field, but Tolstov has opened the way, and others will carry the task further.

Tolstov reached a number of general conclusions based upon his study of the coins. First, one dynasty, the Afrighids, ruled in Khwārazm from the third to the eighth century A.D. Second, they had a distinctive sign , which they placed on the coins, and which was related to the Kushan mark. This would substantiate the Chinese sources, which imply a Kushan confederacy in ancient times.[87] So the ruling dynasty in

84 From Henning's account, *op. cit.*, *ZDMG*, 1936, *30, the Khwārazmian language, written in Arabic script, sometimes has long vowels where short ones should be represented, but not *vice versa*.

85 Tolstov, *op. cit.*, 136–137.

86 Ya. I. Smirnov, *op. cit.*, Plate XLI, no. 71.

87 E. Chavannes, *Documents sur les Tou-Kiue* (*Turcs*) *occidentaux* (St. Petersburg, 1903), 134.

Khwārazm was of Kushan origin. Third, close cultural contact with Bactria is indicated by finds of silver vessels and objects common to both, as well as by finds of Greco-Bactrian coins in the territory of ancient Khwārazm. The trade which Khwārazm maintained with Eastern Europe in Islamic times also existed in the pre-Islamic period, as Khwārazmian coins found in Russia proper show. Finally, the preservation of the ancient type of Khwārazmian coins into later times indicates that Khwārazm was long independent, and the cultural tradition was preserved with little outside influence except from Iran.[88]

A new, unique coin was found in the excavations of Toprak-kala in Khwārazm in 1940.[89] It was well preserved, with a debased Greek inscription on the reverse around the figure of a horseman in the Parthian style.[90] This was the oldest "Khwārazmian" coin yet found, according to Tolstov. On the basis of the horseman pictured on the reverse, Tolstov proposed a chronological relationship of the later Khwārazmian coins with the issues of the Greco-Bactrian king Eucratides, as follows: Eucratides—the coin from Toprak-kala—the coins of Heraya—the two Khwārazmian types.[91] On the basis of stylistic resemblance to Parthian coins, the unique find from Toprak-kala was dated in the first century B.C. This provides a long series of Khwārazmian coins, according to Tolstov, although many problems of dating and deciphering still remain.

[88] Tolstov, *op. cit.*, 145. Islamic coins were minted early in Khwārazm. We have a *fals* struck in Khwārazm in 224/838; W. Tiesenhausen, "Novoye sobranie vostochnykh monet A. V. Komarova," *ZVOIRAO*, 3 (1888), 56, plate II, no. 3.

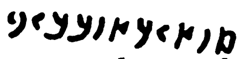
[89] Tolstov, "K istorii Khorezmiiskikh Siyavushidov," *Izvestiya Akademii Nauk*, seriya istorii i filosofii (1945), 275.

[90] See the plate on p. 280 of Tolstov's article.

[91] *Ibid.*, 278.

III. The Coins of Bukhara

Coins of a class which has attracted more attention than the Khwārazmian issues were first reproduced by C. M. Fraehn in 1832, without comment.[92] Cunningham also reproduced them with a brief note eight years later.[93] The first attempt to study these coins was made by E. Thomas, who suggested that they might have come from the western part of Central Asia, and been modeled after a Sasanian prototype.[94] The practice of each Sasanian ruler of adopting a special type of headdress to be used on his portraits and coins made the identification of the prototype easy. The prototype was the portrait of Varahrān V (420–438 A.D.). Thomas, however, thought that the model was taken from the coin type of the rebel Varahrān Chūbīn, *ca.* 578, who in turn had copied the coinage of his predecessor of the same name.[95] No one was able to assign these coins to a definite time or area of circulation, until a Russian orientalist, P. Lerch, determined their provenance and showed that they were the issues of the rulers of Bukhara.

The legend on the coins  was read as *Bukhār Khuddāt* by Lerch.[96] The second word, however, was unsatisfactory, for it corresponded to no known word in any

[92] C. M. Fraehn, *Die Münzen der Chane vom Ulus Dschutschi's* (St. Petersburg, 1832), plate XVI, figs. א and ב.

[93] A. Cunningham, "Notes on Captain Hay's Bactrian Coins," *JRASB* (1840), plate 3, nos. 6 and 7, facing p. 538.

[94] In J. Prinsep, *Essays on Indian Antiquities* (London, 1858), II, 116–117.

[95] E. Thomas, "Bilingual Coins of Bukhara," *NC*, third series, vol. 1 (1881), 118.

[96] First in P. Lerch, "Sur les monnaies des Boukhâr-Khoudahs ou princes de Boukhara avant la conquête du Maverennahr par les Arabes," *Travaux de la troisième session du Congrès International des Orientalistes*, 2 (St. Petersburg, 1879), 417–429; *cf.* also his *Monety Bukhar-Khudatov* in the series Trudy Vostochnago Otd. Russ. Arkh. O-va., 18 (1876).

Iranian tongue, nor could it be explained as the combination of two words meaning "God-given," or "self-given." No new plausible interpretation of the second word was proposed until Allotte de la Fuÿe, on the basis of some additional specimens with slightly different legends, suggested the reading *Khūd Kānā*.[97] This was assumed because *Kānā* is the name of the ruler mentioned by Narshakhī as the first person who coined money in Bukhara (see addenda). The veracity of Narshakhī's account was doubted by Barthold, and it is difficult to believe that the story was not transformed in some degree, if not invented.[98] It is true that we have no historical references to a ruler called *Kānā*, but since the name does occur in Sogdian it is not to be dismissed as pure fiction.[99]

In a review of J. Walker, *A Catalogue of the Arab-Sassanian Coins* (London, 1941) in the *Journal of Near Eastern Studies* (1943), 209, M. Sprengling suggested that the final *t* of the word *Khuddāt* was the Sogdian plural ending *-t*. In Sogdian, however, the word is *γωt'ω*, and Henning's reading (below) eliminates this conjecture.

Since the time of Lerch many of these coins have been found, especially by the Soviet archaeological expeditions in Central Asia. The coins may be divided tentatively into three groups: those with only a "Bukharan" legend, the second group with bilingual legends, and finally those with Arabic alone. It seems fairly well established that the coins with

97 A. de la Fuÿe, "Imitations de la drachme de Varahran V, frappées à Merv," *NC*, 7 (1927), 175–180. *Cf.* the discussion in J. Walker, *A Catalogue of the Arab-Sassanian Coins* (London, 1941), lxxxviii, and A. de la Fuÿe, "Monnaies incertaines de la Sogdiane II," *RN*, 29 (1926), 150. He says these coins are imitations of the issues of Bahrām Gōr (Varahrān V), struck at Merv after his victory over the Hephtalites *ca.* 428 A.D.

98 W. Barthold, *Turkestan Down to the Mongol Invasion* (London, 1928), 204.

99 The name occurs as *k'n'kk* in H. Reichelt, *Die Soghdischen Handschriftenreste*, *op. cit.*, 49.

bilingual legends existed as late as the reign of Hārūn al-Rashīd (170–193/786–809).[100] The "Bukharan" or Sogdian legend remains the same on almost all of the coins till the final disappearance of this formula on the third class.

The legend on these coins presented a problem, and with no pretence to a knowledge of Sogdian epigraphy, I requested the aid of my former teacher, Dr. W. B. Henning of the London School of Oriental and African Studies. In a letter dated 19 July 1947 the following communication was received, which, I believe, solves the problem of the legend on the "Bukhār Khudāh" coins:

> The coins of the "Bukhār-Khudāhs," last studied by John Walker, *A Catalogue of the Arab-Sassanian Coins* (London, 1941), pp. lxxx foll. and plates xxviii–xxix, bear inscriptions in the Sogdian script and language. The writing resembles closely that familiar from the Sogdian "Ancient Letters"; *cf.* H. Reichelt, *Die Soghdischen Handschriftenreste des Britischen Museums*, 2 (Heidelberg, 1931), which, as I hope to show elsewhere,* date either from the last decennium of the second or the second decennium of the fourth century A.D. The numismatists who have occupied themselves with these coins in recent times have failed to recognize the true character of the writing; in consequence they have imported into their readings *e.g.* a letter *d* (supposedly resembling *r*), thereby producing or admitting such legends as *Bukhār-Khuddāt* or *Bukhār Khud Kānā*, although such a letter does not exist in Sogdian.
>
> How closely the legends follow the rules of Sogdian orthography is shown even by their first letter, the *p*† of

100 Walker, *op. cit.*, xc–xcvii, also A. de la Fuÿe, in *NC*, 7 (1927), 162–174.

* [W. B. Henning, "The Date of the Sogdian Ancient Letters," *BSOAS*, 12 (1948), 605–615—. R. N. F.]

† That it is *p* cannot seriously be doubted.

pwγ'r=Bukhara; for the three sounds *β*, *p*, and *b* of the Sogdian language the Sogdian script had only the two letters *β* and *p*, the latter of which was used for both *p* and *b* (similarly the letter *t* had to serve for both *t* and *d*). The eighth and ninth letters of the legends are distinct (in most specimens) from the fifth (*r*) by a longer and more curved downward stroke to the left (see *e.g.*, FRONT., figs. 5–9, and Walker Pl. xxviii b 2, b 5, b 8; xxix 1, 2, 3, 4, 6, 8, 9, 10); they can therefore be read only as *β* or *k* (for the eighth, *β* is more likely by far). The eleventh letter, in some of the oldest specimens, has the shape which is precisely that of the Sogdian letter *y* in the "Ancient Letters" (so clearly Walker Pl. xxviii b2 and b5); later on it is like * (Walker Pl. xxix 1 and 7) sometimes split into two parts (or *ibidem* 2, 3, 4, 8, 10 and FRONT., figs. 7–9), sometimes compressed into a simple vertical (or , *ibidem* xxviii b 8, xxix 5, 6, 9, and FRONT., fig. 5). The split form of this letter has led Allotte de la Fuÿe (and before him, as we shall see, the medieval historians of Bukhara) to the assumption that the legend consisted of twelve letters (the two last being *n'*), an assumption which cannot be maintained in view of the clear form of the letter in the oldest specimens.

There are thus only two possible readings of the legend,

either *pwγ'rγwβk'y*
or *pwγ'rγwββ'y*,

the former being preferable. The legend consists of three words, *pwγ'r*, *γwβ*, and *k'y*: this is assured by the Bukhara coin with a different legend (Walker p. lxxxix) in which a word (of doubtful reading, perhaps *mz'yγ* "great"?) intervenes between *pwγ'r* and *γwβ* and in which *γwβ* is apparently not followed by *k'y*. The first word, *pwγ'r*, has long been recognized as the name of Bu-

* Corresponding to final *-y* in the later Sogdian cursive script.

khara. The second, *γwβ*, is obviously the common Sogdian word for "king," which is mostly spelt *γwβw* but occurs also as *γwβ* (see P 6, 58 . . . *'rδ'yp'k-γwβ*= . . . *prabhā-rāja*).*

The last word, *k'y*, is a little more difficult. As in view of the long run of the legend (probably from Sasanian times to the end of the eighth century A.D.) it cannot well be the name of a king, it seems likely that it is an additional title. No such title is found in Sogdian. However, I see no objection to the assumption that the kings of Bukhara borrowed, in Sasanian times, the grandiloquent Persian title *Kai*, which in Sogdian could not be spelt otherwise than as *k'y*. In Pahlavi script *Kai* is spelt *Kdy*,† *cf. Rdy* for *Rai*, *Pwsdy* for *Pūsai*, etc. We find *Kai* on the coins of several Sasanian kings as their title or one of their titles. Thus on nearly all coins issued by Yezdegerd II and Pērōz (together A.D. 439–84). Although *Kdy* occurs both before (earliest under Šāpūr III, *cf.* A. D. Mordtmann, "Die Münzender Sassaniden," *ZDMG*, 24 (1880), 72, No. 304) and after those two kings, it is characteristic of the Sasanian coinage of the fifth century only. If we add to this the fact that the coin imitated by the rulers of Bukhara is one struck by Bahrām Gōr, the predecessor of Yezdegerd II, we are driven to the conclusion that the Bukhara coins were first issued in the 5th century. This view is further supported by the palaeographic evidence which leaves no doubt that the date of the first coins was not far removed from the date of the Sogdian "Ancient Letters."

The meaning of the legend *Pwγ'r γwβ k'y* (which

* E. Benveniste, *Textes Sogdiens* (Paris, 1940), 85.

† *Cf.* E. Herzfeld, *Archaeologische Mitteilungen aus Iran*, 1, p. 77 foll. H. H. Schaeder, "Beiträge zur Iranischen Sprachgeschichte," *Ungarische Jahrbücher*, 15 (1936), 571; again misunderstood by J. M. Unvala, *Coins of Ṭabaristān* (Paris, 1938), 26, note.

should be pronounced as *Buχār χuβ kai*) is therefore "King-Emperor of Bukhara." The title was presumably adopted by the rulers of Bukhara under Hephthalite dominion, in emulation of the kings of Persia whose coinage they borrowed at the same time. What, however, Narshakhī says about *Kānā the Bukhār-Khudāh*, who was the first in Bukhara to strike coins at the time of Abū Bakr, is not genuine tradition but merely *derived from an early misreading of the coin legend*. In the tenth century A.D. when Sogdian script could still be read in Bukhara, but the true reading *K'y* had long been forgotten, specimens of the coin in which the last letter was split into two sections were misread as *pwγ'r γwβ k'n'* by an early numismatist, and this was interpreted to mean "King of Bukhara (translated* as *Bukhār-Khudāh*) Kānā." Possibly this misunderstanding was helped along by the fact that a family name *Kana*(*k*) happened to exist in Sogdiana, or at least in Samarkand (see Reichelt, *loc. cit.*, p. 12, *k'n'kk*).

The bilingual Bukharan coins have been discussed in detail by Walker.[101] The coins with all-Arabic legends have been known for a long time.[102] They represent the final product in the development of the Bukharan series. They have been assigned to the time of the Caliph Amīn (193–198/808–813), although the legends are illegible.[103]

Islamic authors mention three types of alloy dirhems in

* The translated title, which was substituted for the Sogdian title, was probably in official use in Bukhara in the eighth century A.D., when the Sogdian language had been largely replaced in that district by Eastern Persian.

101 Walker, *op. cit.*, xc.

102 First reproduced by C. M. Fraehn, *Novae Symbolae ad Rem Numariam Muhammedanorum* (St. Petersburg, 1819), section 2, plate 2, no. 14. On p. 46 he discusses the coin and believes it was minted by the Khazars.

103 Walker, *op. cit.*, xciv.

circulation in Transoxiana, the *Ghiṭrīfī*, *Muḥammadī*, and the *Musaiyabī*. Walker and others have identified these dirhems with the Bukharan dirhems which have Arabic letters as well as the Sogdian legend. The literary accounts say that they had a figure engraved on them and illegible characters, but it is nowhere stated that all had the same figure or the same legend.[104] Ibn Ḥauqal, however, said that the people of Samarkand had dirhems called *Muḥammadī*, which belong to the coinage of *Bukhara* (*wa la hum min nuqūd Bukhārā*).[105] They are also described as alloys, which is corroborated by the account of Narshakhī regarding the Ghiṭrīfī dirhems (see below). On the other hand, the area of circulation of these dirhems presents some difficulty. According to Ibn Khurdādhbih, in speaking of the taxes, Ferghāna, Sughd and other areas paid in Muḥammadī dirhems, Shāsh, Ushrūsana and others paid in Musaiyabīs, while Bukhara alone paid in Ghiṭrīfīs.[106] If all three coins are the same type, then one can say that Bukharan coins circulated throughout Transoxiana. The difference in the coins seems to have been the Arabic name stamped on them, but no coins with the name *Ghiṭrīf* or *Musaiyab* have been found. Walker misunderstood Barthold when he criticized the latter's statement that "the words of Narshakhī and Sam'ānī . . . do not allow of any doubt that the names of the three viceroys were engraved on coins."[107] The words of these two authors are explicit on this point; whether they told the truth or not is another matter. Ibn Ḥauqal says that there were only three mint towns in Transoxiana: Bukhara, Samar-

[104] H. Sauvaire, "Matériaux pour servir à l'histoire de la numismatique et de la métrologie musulmanes," *Journal Asiatique*, septième série, 18 (1881), 505–506; 19 (1882), 38.

[105] Ibn Ḥauḳal, *Opus Geographicum*, ed. J. H. Kramers, *BGA* 2, vol. 2 (Leiden, 1939), 500, line 4.

[106] M. J. de Goeje, ed., *Kitāb al-Masālik wa'l-Mamālik* of Ibn Khurdādhbih, *BGA* 6 (Leiden, 1889), 27–28 (French trans.).

[107] Walker, *op. cit.*, xciii.

kand and Ilāq (al-Shāsh).[108] I should like to suggest, with no proof, but as a mere surmise, that the Ghiṭrīfī dirhems were minted at Bukhara, the Muḥammadī dirhems at Samarkand (with the same portrait as the Ghiṭrīfī), and the Musaiyabī dirhems at Shāsh. I do not venture to surmise whether the last were the same style, and with the same portrait, as the other two. The names in Arabic, which are found on various examples of this coinage, serve to complicate rather than simplify the problem of identification. Walker has dealt extensively with this, and it need not concern us here.[109]

An interesting feature is the simultaneous use of alloyed dirhems of the old type with a portrait, and the new Islamic coinage of the 'Abbāsids. 'Abbāsid dirhems were struck in Bukhara in 148/765, 151, etc., in Samarkand as early as 143/760.[110] So it would seem that the "pre-Islamic" type of coins was minted in Bukhara (and Samarkand?) at the same time (and place?) as 'Abbāsid dirhems. The latter must be what Narshakhī means when he speaks of "pure silver" dirhems which came to equal six Ghiṭrīfī dirhems. It is probable that there were these two types of coins in circulation in Transoxiana. The 'Abbāsid dirhems may have served for trading purposes with the central provinces of the Caliphate, while the "pre-Islamic" type of dirhems were certainly for local circulation.

IV. Sogdian Coins

This by no means completes the survey of pre-Islamic coins of Transoxiana. The various specimens noted by Allotte de la Fuÿe and summarized by de Morgan present problems which might be solved after a general classification of all the coins of

108 Ibn Ḥauḳal, *op. cit.*, 510, line 6.

109 Walker, *op. cit.*, xc–xcvii.

110 A. Markov, *Inventarnyi Katalog Musulmanskikh Monet Imperatorskago Ermitazha* (St. Petersburg, 1896), 16–17.

northern India, Afghanistan and Khurāsān, as well as Transoxiana, has been made. There is too little information on the provenance of many of the coins to assign them to any area or period of time without a decipherment of the legends.

Mention must be made of several hoards of coins found in Transoxiana, which have been designated as "Sogdian" coins.[111] There are two classes, one called Sogdian coins of Sasanian type, not investigated,[112] and Sogdian coins of Chinese type, which have been studied.[113] These latter coins have square holes in the center, and have legends in the Sogdian cursive (Buddhist) script. One coin has been read *tryωn MLK'*, "Tarkhūn king," the ruler of Samarkand *ca.* 700–710 A.D. Another coin has the legend *'ω–rk MLK'*, which has been read by Freiman as *'ωγrk*, "Ghūrak, king," a ruler of Sogdiana *ca.* 710–737.[114] A third coin in the Hermitage has been read as *Bγsωm'n MLK'*, who is identified with a king of Samarkand mentioned by the *T'ang shu ca.* 650–655 A.D. 拂呼縵 Fu-hu-man, *p'i̯uət-χuo-muân* (acc. to B. Karlgren, *Grammata Serica* (Stockholm, 1940), 500 h, 55 h, and 266 k resp.), which name Chavannes identifies with N. Persian *Bahman*, MP (book) *Vahuman*,[115] Avestan *vohu. manah*, one of the

[111] These coins were found in the excavations of Tali Barzu (*cf.* G. V. Grigor'ev, "Poseleniya drevnego Sogda," *Kratkie Soobshcheniya*, 6 (Moscow, 1940), 31), and of Baikand (*cf.* A. Yu. Yakobovskii, "Zarafshanskaya arkheologicheskaya ekspeditsiya 1939 g," *Kratkie Soobshcheniya*, 4 (1940), 50).

[112] Yakubovskii, "Zarafshanskaya ekspeditsiya 1939 g," *Trudy Otdela Vostoka*, 2 (1940), 63.

[113] O. I. Smirnov, "O trekh Sogdiiskikh monetakh," *VDI* (1939), no. 1, 116–120.

[114] For further information on Ţarkhūn and Ghūrak, *cf.* V. A. and I. I. Krachkovskii, "Drevneishii arabskii dokument iz Srednei Azii," *Sogdiiskii Sbornik* (Leningrad, 1934), 53–54, 61–66; also A. Freiman, "Datirovannye Sogdiiskie dokumenty s gory Mug v Tadzhikistane," *Doklady Gruppy Vostokovedov, Trudy Instituta Vostokovedeniya*, 17 (1936), 163.

[115] E. Chavannes, *Documents sur les Tou-Kiue (Turcs) occidentaux* (St. Petersburg, 1903), 135.

Ameša Spenta. The ending of the first Chinese character *p'i̯uət*, however, causes some difficulty. In T'ang times and even later this character would have been employed to transliterate a syllable ending in *-r*, so the syllable originally might have been something like *-bor* or *-var*. It would be most unusual if the consonantal ending had disappeared at this time in Chinese. It could possibly have transcribed some guttural *à la rigueur*. Great care must be taken in the reconstruction of the sounds of syllables from Chinese characters, and the supposition that *Vahuman* is the name which the Chinese characters reproduce is open to doubts. It is also difficult to understand the Sogdian form given by Freiman, and the reproduction of the coin is so poor one cannot check the reading.

Whether these coins are the same type as those described, but not reproduced, by Drouin, is unknown.[116] Several series are mentioned by him, including one with Chinese characters as well as "Sogdian." It is more probable, however, that these coins of Drouin belong to the Turgeš, a west Turkish confederation or empire which flourished in the first decades of the eighth century of our era with its center in the Lake Issyk Kul region.[117] These last-named coins are of Chinese type with square holes in the center. Many were preserved in the Hermitage Museum and others were found in excavations in Taraz (Talās) and elsewhere.[118] These coins have been interpreted and divided into six classes by Bernshtam, and dated *ca.* 704–766 A.D.[119] Some of the coins were minted at the town of Balāsāghūn, which was located near Lake Issyk Kul.

[116] E. Drouin, "Monnaies Turco-Chinoises," *RN* (1891), 456–457.

[117] W. Barthold, *Turkestan Down to the Mongol Invasion* (London, 1928), 187.

[118] A. N. Bernshtam, "Tyurgeshskie Monety," *Trudy Otdela Vostoka*, 2 (Moscow, 1940), 105.

[119] *Op. cit.*, 105–111.

V. Islamic Coinage

The pre-Islamic type of coinage in Transoxiana overlaps in time the Islamic coinage, which was first introduced by the currency reform of the Umayyad caliph 'Abd al-Malik *ca.* 76 A.H./695 A.D. The first reformed coin found in Rayy, Iran, dates from 81 A.H.,[120] while one coin in the Bibliothèque Nationale, Paris, minted at Merv, is from the year 76.[121] We have no evidence that the new coinage became current in Transoxiana at the time of the reform. If the reformed coins had circulated along with the pre-Islamic coins anywhere in Transoxiana, then the mint at Merv probably would have supplied all needs in the lands across the river.

The Umayyads never controlled the lands beyond the river. Using Merv as a base of operations they sent armies and raiding expeditions into Transoxiana. Prisoners and booty were secured, tribute imposed and converts made, but the land was not firmly held. Merv was the seat of the governor of Khurāsān and a mint city from pre-Islamic times. It has been mentioned (note 108) that there were only three mint towns in Transoxiana (in pre-Sāmānid times). It is improbable that Bukhara and Samarkand were mint towns for Umayyad reformed currency, while al-Shāsh, in Ilāq Province on the frontier of Islamic territory, could hardly have been one. The lack of a continuous tradition of minting makes the study of coinage here more difficult than in other parts of the Caliphate.

The 'Abbāsid revolt must have accelerated the process of Islamization in Transoxiana, for 'Abbāsid power was soon more strongly entrenched here than the Umayyad had ever been. Still Transoxiana was a breeding ground of revolts and

[120] G. C. Miles, *The Numismatic History of Rayy*, Numismatic Studies no. 2 (New York, 1938), 8.

[121] H. Lavoix, *Catalogue des Monnaies Musulmanes de la Bibliothèque Nationale, Khalifes Orientaux* (Paris, 1887), 68, no. 203.

conspiracies against the central government, both political and religious. The 'Abbāsid general Abū Muslim struck coins in the mint towns of Iran, and the British Museum has two copper coins struck in Bukhara in 132/749–750, but lacking his name.[122] In any case they are the same kind as the later 'Abbāsid copper issues. They are from the time when the partisans of Abū Muslim controlled the city, but were they the first coins of Islamic type coined in Bukhara? According to Narshakhī, coins were not minted in Bukhara before the time of Abū Bakr (632–634 A.D.), but this statement cannot be verified, and it probably refers to the coins of pre-Islamic type.

Shortly after the founding of the 'Abbāsid Caliphate, Islamic coins appear from the mints of Transoxiana in abundance. A Kufic coin of Muḥammad al-Mahdī, struck at Bukhara in 143/760, is one of the earliest 'Abbāsid coins from this mint.[123] At this time (from 141 A.H.) al-Mahdī was an honorary governor of Khurāsān under his father al-Manṣūr, later almost co-regent. The minting of 'Abbāsid dirhems probably started a little later in Samarkand, although Markov mentions coins as early as 143 and 144/760–761 struck in Samarkand.[124] The third mint town of Transoxiana, al-Shāsh, was almost certainly later in the minting of 'Abbāsid coins than the other two. A copper *fals* is reported from here, dated 166/782–3, but it is uncertain.[125] The reading Akhsīkath, capital of Ferghāna province, on a copper *fals* of the year

[122] S. L. Poole, *Catalogue of Oriental Coins in the British Museum*, I (London, 1875), 191, nos. 79 and 80.

[123] E. J. Thomas, "On Some Bilingual Coins of Bokhara," *Indian Antiquary*, 8 (1879), 273. This coin is found in Fraehn's *Recensio*, p. 21, no. 22. The coin of Manṣūr 138/755 reported by W. Tiesenhausen, *Monety Vostochnago Khalifata* (St. Petersburg, 1873), 68, is doubtful.

[124] A. Markov, *Inventarnyi katalog musulmanskikh monet Imperatorskago Ermitazha* (St. Petersburg, 1896), 16, nos. 51 and 56.

[125] Tiesenhausen, *op. cit.*, 110, footnote to no. 1008.

144, is most suspicious and, as far as I know, unique.[126] Al-Shāsh, near modern Tashkent, was a province rich in silver mines and of importance in the trade with the nomads on the frontiers of Islamic territory. Hence, the issuance of 'Abbāsid coins here is not surprising.[127] Since the Musaiyabī dirhems were especially circulated among the Turks in the steppes, might not al-Shāsh have been the mint of these dirhems?[128] We find dirhems struck at al-Shāsh and at Ma'din al-Shāsh in 190/805–6, but earlier dates are possible.[129]

A problem arises, for we find two names on coins of the 'Abbāsid period, *al-Shāsh*, and *Ma'din al-Shāsh*, "the mine of Shāsh." There is no reason, however, why there could not have been a mint at the settlement near the mines as well as in the capital city of the province. It is somewhat unusual but perhaps the most plausible explanation.[130]

'Abbāsid coins continued to be minted in Transoxiana until the advent of the Sāmānids. Before the rise of this dynasty, which was independent of caliphal authority, the family of the Ṭāhirids, governors of Khurāsān, had established an almost independent regime, and coins were issued in their name. Two years after the date when Ṭalḥa ibn Ṭāhir was confirmed in the governorship of Khurāsān we find a coin

[126] *Ibid.* 73, no. 732.

[127] G. Le Strange, trans., *The Geographical Part of the Nuzhat-al-Qulūb* of Qazwīnī (London, 1919), 193.

[128] A. Zeki-Validi Togan, *Ibn Faḍlān's Reisebericht*, Abh. für die Kunde des Morgenlandes (Leipzig, 1939), 112–113.

[129] Tiesenhausen, *op. cit.*, 165. The earliest coin in the British Museum from Shāsh, acc. to S. Lane-Poole, *op. cit.*, 9 (additions to vol. 1), 59, is the year 218 A.H.

[130] This may have been the name of a town *kūh-i-sīm* in Persian; W. Barthold, *Turkestan*, 172. On this question *cf.* W. Tiesenhausen, "O Samanidskikh Monetakh," *Zapiski Imperatorskago Arkheologicheskago Obshchestva*, 6 (1853), 35.

minted in his name in Bukhara, 209/824.[131] A coin of Ṭalḥa from Samarkand dated the following year indicates that both mints started coining his currency at the same time.[132] This coinage can be designated as 'Abbāsid coinage, which continued until the advent of the Sāmānids. Since the Ṣaffārids did not rule the territory on the northern side of the Oxus River, except for temporary nominal control in limited areas, they did not issue any coins in the mints of Transoxiana.[133]

Under the Sāmānids new mints appear. In addition to the old mints, we find Akhsīkath in the province of Ferghāna, Tūnkath, capital of Ilāq province and Ushrūsana, the province to the northeast of Samarkand. Why were new mints opened? Several reasons may be advanced in explanation. Under the Sāmānids Transoxiana flourished as never before, and prosperity was a concomitant of internal security. At the same time, as we see from Narshakhī and other Islamic authors, the amount of money in circulation increased, taxes rose, and consequently the need for more money grew. Trade with the people of the steppes flourished, as the large hoards of Sāmānid coins found in northern and eastern Europe indicate.[134] Furthermore, the frontier of Islam was extended farther into the lands of the infidels under the Sāmānids. With this advance the territory which had once been the frontier now became the safe hinterland. The exploitation of the silver mines of Ferghāna and Ilāq provinces was the result.

Al-Shāsh was already an important mint under the Ṭāhirids. We find coins minted there in the name of 'Abdallāh ibn Ṭāhir in 220/835 and 229/843, and it continued into Sā-

131 S. Lane Poole, *op. cit.*, vol. 2, 73, no. 241.

132 *Ibid.*, 9 (additions), p. 176, no. 239 m.

133 *Cf.* R. Vasmer, "Über die Münzen der Ṣaffāriden und ihrer Gegner in Fārs und Ḫurāsān," *Numismatische Zeitschrift*, 23 (Vienna, 1930), 131–162.

134 R. P. Blake, "The Circulation of Silver in the Moslem East Down to the Mongol Epoch," *Harvard Journal of Asiatic Studies*, 2 (1937), 295.

mānid times.[135] From Ma'din al-Shāsh one coin is dated as early as 190/805.[136] The earliest dated coins in Fraehn's *Recensio*, from the mints of Transoxiana, are: Tūnkath, 302/914 (p. 73, no. *154), Binkath, 306/918 (p. 79, no. *186), Akhsīkath, 304/916 (p. 76, no. *171), Ferghāna, 304/916 (p. 566, no. *171 a), Tirmidh, 293/905 (p. 51, no. *53). The rise to power of the Sāmānid dynasty occurred at this time. It is possible that Akhsīkath and Ferghāna represent one mint, for the former was the chief city in the province of Ferghāna. Likewise, Binkath was the largest city in Shāsh province, and was itself called al-Shāsh.[137] Tūnkath was the center of Ilāq province, but its exact location is uncertain. All of these names are Sogdian, ending in the Sogdian word for city, *knδ>kaθ*. Coins from Tirmidh on the Oxus River are few and rare, so possibly the mint was temporary. There may have been other mints in use for a short period of time, but the chief mints have been mentioned.[138]

The geographer Iṣṭakhrī says that dirhems were used in Bukhara but not dīnārs.[139] Yāqūt has the same statement, adding that this applied to the time of the Sāmānids.[140] The problem of gold and silver standards is complicated and can-

135 C. M. Fraehn, *Recensio Numorum Muhammedanorum*, (St. Petersburg, 1826), 16***, no. *4; B. Dorn, *Ch. M. Fraehnii Supplementa ad Recensionem* (St. Petersburg, 1855), 35–36, nos. c-4, a 6, b 9.

136 C. M. Fraehn, *Recensio*, 34, no. *238. P. Casanova, *Inventaire Sommaire de la Collection des Monnaies Musulmanes de S.A. la Princesse Ismaīl* (Paris, 1896), 21, no. 502, is the same. The coin dated 170/786 from Ma'din al-Shāsh, no. 501, is doubtful, and may be 190.

137 W. Tiesenhausen, "O Samanidskikh Monetakh," *Zapiski Imperatorskago Arkheologicheskago O-va.*, 6 (St. Petersburg, 1853), 34–35. Al-Shāsh may have been the chief mint of the Sāmānids.

138 *Ibid.*, 205. Tiesenhausen mentions a dirhem struck at Farab (Firabr), near Bukhara in 342/953, in the name of the Caliph.

139 Iṣṭakhrī, ed. M. De Goeje, *BGA* 1 (Leiden, 1870), 314.

140 Yāqūt, *Mu'jam al-Buldān*, ed. F. Wüstenfeld, 1 (Leipzig, 1924), 519.

not be discussed here, but the collection of gold coins in the Museum of the American Numismatic Society alone is enough to disprove the statements of the Muslim geographers. Dīnārs minted in al-Shāsh 248–253/862–867, in Samarkand 247–310/861–922, and elsewhere, indicate that gold did not vanish and silver occupy its place. On the other hand, silver certainly did predominate over gold as the medium of exchange in this period. It is known that silver was the money of the steppes, and the hoards of Islamic coins found in Eastern Europe are conspicuous for the absence of gold coins. Therein lies another reason for the development of the silver mines of Transoxiana, and the increased amount of currency in circulation. The coinage became more and more debased, evidence for which is found both in literary texts and in the coins themselves. This, however, is an involved economic question requiring detailed investigation of the literary sources. Further investigation of Sāmānid currency would take us into new areas with many new problems.

PERSIAN TEXT OF CHAPTER 17 OF NARSHAKHĪ'S *HISTORY OF BUKHARA*

ذکر درهم و سیم زدن ببخارا

نخستین کسی که سیم زد ببخارا پادشاهی بود نام او کانا بخار خدات و او سی سال بر بخارا پادشاه بود و در بخارا بازرگانی بکرباس و گندم بود اورا خبر دادند که بولایتهای دیگر سیم زده‌اند او نیز بفرمود تا ببخارا سیم زدند از نقرهء خالص وبرآن صورتی خویش فرمود با تاج واین بروزگار خلافت امیر المؤمنین ابوبکر صدیق رضی الله عنه همچنان بود تا بروزگار [نواب] هارون الرشید غطریف بن عطا امیر خراسان شد در ماه رمضان بسال صد و هشتاد وپنج واین غطریف برادر مادر هارون الرشید بود ومادر هارون الرشید خیزران نام بود دختر عطا از یمن از شهریکه آنرا جرش خوانند واسیر افتاده بود بطبرستان واز آنجا اورا بنزدیك مهدی آوردند مهدی‌را از وی دو پسر آمد یکی موسی الهادی و دوم هارون الرشید وچون کار خیزران بزرگ شد این غطریف بنزدیک وی آمد [از یمن] وبا او می بود هارون الرشید خراسان بوی داد وبدان تاریخ در دست مردمان سیم خوارزم روان شده بود ومردمان آن سیم‌را بناخوش دلی گرفتندی وآن سیم بخارا [که روان‌شده] از دست مردمان بیرون شده بود چون غطریف‌بن عطا بخراسان آمد اشراف و اعیان بخارا بنزدیک او رفتند و از وی در خواستند که مارا سیم نمانده است در شهر امیر خراسان فرماید تا مارا سیم زنند و بهمان سکه زنند که سیم بخارا در قدیم بوده است و سیمی می باید که هیچکس از دست ما بیرون نتواند کرد و از شهر ما بیرون نبرد تا ما با سیم میان خویش معاملت بکنیم و بدان تاریخ نقره عزیز بود پس اهل شهررا جمع کردند و از ایشان رأی خواستند در این معنی برآن اتفاق کردند که سیم زنند از شش چیز زر و نقره و مسنگ و ارزیز و آهن و مس همچنان کردند وبآن سکهء پیشین بنام غطریف زدند یعنی سیم غطریفی و عامهء مردمان غدرفی خوانندی و سیم قدیم از نقرهء خالص بود و این سیم که باخلاط زدند سیاه آمد اهل بخارا نگرفتند سلطان خشم کردشان و بکراهت میگرفتند و قیمت نهادند شش غدرفی بیک درهم سنگ نقرهء خالص وسلطان بهمین قیمت گرفت تا رایج شد[1] و بدین سبب خراج بخارا گران شد بهرآنکه خراج بخارا درقدیم دویست هزار درم نقره بود چیزی کم چون غدرفی زدند و شش درم سنگ نقره رایج شد سلطان بهمین غدرفی بر ایشان لازم کرد چون [نر خ]

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غدرفی عزیز شد وچنان شد که درم غدرفی بدرم نقره روان شد و سلطان نقره نخواست و غدرفی خواست خراج بخارا از دویست هزار درم نقره کم چیزی بود بیکبار[2] هزار هزار درم و شصت هزار و هشت هزار وپانصد و شصت و هفت درم غدرفی بر آمد محمدبن جعفر آورده است که بسال دویست وبیست[3] [صد] درم نقره پاکیزه بهشتاد وپنج درم غدرفی بوده است احمد بن نصر گوید در شهور سنه اثنین و عشرین و خمسمایه بود که ما این کتاب را ترجمه کردیم صد درم نقره خالص بهفتاد درم غدرفی بود و زر سرخ [4] مثقالی بهفت ونیم درم غدرفی بود محمد بن جعفر آورده‌است که این غدرفی بکوشک ماخک زده‌اند در شهر بخارا و در سیم غدرفی نقره بیشتر از اخلاط دیگر است و گفته اند که در هر درمی یک حبه زر است و در هژده درم بوزن نیم درم سنگ یا چهار دانگ ونیم باشد وببخارا عدلی [و] پشیز بسیار زده اند هرکسی از آل سامان واز پادشاهان دیگر بعد از آل سامان ذکر آن کرده نشد چون در آن عجبی نبود

(2) Teheran ed. MS. D: خراخ بخارا از آن سبب زیاده صد هزار درم شصت هزار و هشت هزار درم

(3) MS. A: دویست شصت و بیست. It is better to assume that صد has fallen out.

(4) Schefer ed.: در شرع

The chapter on numismatics in Narshakhī's Ta'rīkh-i-Bukhārā *has been translated before, but the translations (except that by P. Lerch) have all been based on the text edited by C. Schefer (Paris, 1893). The present translation is based upon the Teheran edition, 1936, ed. Prof. Raḍavī, with variants (very few) as found in the manuscript of the British Museum* [cf. *C. Rieu,* Supplement to the Catalogue of the Persian Manuscripts in the British Museum (*London, 1895*), *58, no. 87*], *designated* R, *and in a manuscript in the library of the American Oriental Society, designated* A.

TRANSLATION

AN ACCOUNT OF THE MINTING OF DIRHEMS AND SILVER IN BUKHARA[1]

THE first person who coined silver in Bukhara was a ruler named Kānā (*R:* Kātā) Bukhār Khudāt. He was the ruler over Bukhara for thirty years.[2] In Bukhara trading was done with cotton cloth and wheat.[3] He was informed that in other countries silver money was coined. So he too ordered coins to be struck in Bukhara of purified silver, and

[1] The text and translation of this section first appeared in P. Lerkh, "Monety Bukhar-Khudatov," *Trudy Vostochnago Otdeleniya Russ. Arkh. O-va.*, 18 (1876), 60–68. Another version is given pp. 69–74. It was partly translated, apparently without knowledge of Lerkh's work, by E. Blochet in the *Numismatic Chronicle* (1927), 158–159, and by H. A. R. Gibb in the *Harvard Journal of Asiatic Studies*, 2 (1937), 301–302.

[2] The Sogdian name *k'n'kk* has already been mentioned (footnote 99). J. Markwart, *Wehrot und Arang* (Leiden, 1938), 151, identified him with 伽那設, *Chia-na shê*, Karlgren's reconstruction: *g'i̯a nâ śi̯ät*, Kana shad, prince of the T'u chüeh (Turks); *cf.* E. Chavannes, *op. cit.*, 30, 57.

[3] H. A. R. Gibb, *op. cit.*, 301, translates this sentence: "The merchants of Bukhārā who were engaged in the cotton and grain trade informed him that silver coins had been struck in other countries." The majority of manuscripts do not support this translation.

he ordered his image, with a crown, to be put on them. This was in the time of the Caliphate of the commander of the faithful Abū Bakr(al-)Ṣiddīq, God be pleased with him. So it was until in the time of (*A:* the vice regent, نواب) Hārūn al-Rashīd, when Ghiṭrīf ibn ʻAṭā became amīr of Khurāsān in the month of Ramaḍān of the year 185 (September 801).[4] This Ghiṭrīf was the brother of the mother of Hārūn al-Rashīd. His mother was called Khaizurān, the daughter of ʻAṭā from the city of Yemen which is called Jurash (*R* and *A:* خداش). She was taken prisoner in Ṭabaristān, and from there was brought to the Caliph al-Mahdī, who had two sons by her. One was Mūsā al-Hādī and the second was Hārūn al-Rashīd. After Khaizurān had reached such a high position this Ghiṭrīf came to her (*R* adds: from Yemen) and remained with her. Hārūn al-Rashīd gave him (the governorship of) Khurāsān.

At that time the coins of Khwārazm were in circulation among the people, but the people took those coins with reluctance.[5] The money of Bukhara (*R* adds: which had been current) had disappeared among the people. When Ghiṭrīf ibn ʻAṭā came to Khurāsān, the notables and leaders of Bukhara went to him and requested that since they had no silver left in the city, the amīr of Khurāsān should order money to be coined for them from the same die[6] as was used for the

[4] Ṭabarī (ed. De Goeje), 3, 612, 622, merely says he was appointed governor of Khurāsān in 175/791, and was removed the next year. The *haštād* of Narshakhī's text should be corrected to *haftād*. Yaʻqūbī, *Ta'rīkh*, ed. T. Houtsma (Leiden, 1883), 2, 481, says he was the slave of a man of Jurash (in Yemen), and was recommended to the caliph by ʻAlī ibn Sulaimān ibn ʻAlī the wazīr; *cf.* p. 488. This was in the time of Mahdī; see Ibn al-Athīr, ed. C. J. Tornberg (Leiden, 1851–1876), 6, 84. On Khaizurān see Ibn al-Athīr, *ibid.*, 6, 27, and the index to Ṭabarī for many entries.

[5] These are probably the pre-Islamic coins of Khwārazm discussed above.

[6] Walker, *op. cit.*, cli, translates سكه as "die." Blochet, *op. cit.*, 159, as "of the same type."

coins of Bukhara in ancient times. "The coin should be (such) that no one would take it from us or out of our city, so we can carry on trading amongst ourselves with (this) money." At that time silver was expensive. Then the people of the city were assembled and their opinion asked on this matter. They agreed that money should be struck of six things: gold, silver, **msnk*, tin, iron, and copper.[7] So it was done. They struck

[7] P. Lerch, "Sur les monnaies des Boukhâr-Khoudahs," *Travaux de la troisième session du Congrès International des Orientalistes*, 2 (St. Petersburg, 1879), 427, gave two variants: *msk* and *mnsk* (A; *mnk*). He explained this as a word the translator of Narshakhī (from the original Arabic to Persian) could not understand, hence wrote in *musk*. N. Veselovsky, in the *Zhurnal Ministerstva Narodnago Prosveshcheniya* (St. Petersburg, December, 1897), 467, suggested that the Persian word for *tin* should fill this corrupt reading, which is given as *msk*, since tin was a metal found in the analysis of the coins. Veselovsky, however, does not say what the word for tin, which he proposes, is, nor does he give us the chemical analysis of the coins. That this suggestion is to be rejected is evident on looking at the following word in the text, which is "tin." It has been mistakenly translated as "lead." This word ارزیز is to be translated as "tin." Qazwīnī, ed. G. Le Strange, *The Geographical Part of the Nuzhat-al-Qulūb*, Persian text (London, 1915), 262, line 20, trans. 256, specifically identifies this word with the Arabic *qala'ī*. Mehmet Aga-Oglu, "An Observation on the Alloy of the *Ghitrifi* Coins," The American Numismatic Society, *Museum Notes* 1 (1945), 101–104, suggests that these coins were really an alloy of copper and lead. He quotes the work of Gardīzī as a source for this statement. A chemical analysis of the coins should reveal the truth, for other Islamic texts have different statements. In the *Kitāb al-Ansāb* of Sam'ānī, ed. D. S. Margoliouth (London, 1912), 410 a, lines 18–21, almost the identical words used by Narshakhī are found, which indicates that both are from the same source, or the former copied from the latter. Sam'ānī says of Ghiṭrīf ibn 'Aṭā: "When he became amīr over Khurāsān in the year 171/787 [*sic*], during the caliphate of Rashīd, the people of Bukhārā asked him to strike dirhems for them, which could not be carried anywhere and would not be current elsewhere. He struck dirhems, in [one] of which were a number of fine minerals. When it was melted, nothing was left over (*i.e.*, they all fused together). There was alloyed [the following]: gold, silver, iron, lead and copper, ground together with musk ولطحن بمسک. They struck Ghiṭrīfī dirhems from these." Sam'ānī gives رصاص, which is usually translated (and so above) as "lead," but "lead" is properly Persian سرب,

coins with the former die, with the name of Ghiṭrīf,[8] *i.e.*—Ghiṭrīfī money.[9] The common people called them Ghidrifi. The old coins had been made of pure silver, but this money, which was struck in alloy, came out black, and the people of

Arabic آنک; *cf.* al-Bīrūnī, *Kitāb al-Jamāhir* (Hyderabad, 1936), 258. Here رصاص must be translated as "tin" (white lead). The impossibility of the word *musk* is obvious. A communication from Dr. W. B. Henning solves the difficulty.

"The unknown name of the sixth metal which by Narshakhī is given as *msk*, *mšk*, and **msnk* (misspelt *mnk* in cursive script) was almost certainly *msnk*. In this we may tentatively recognize the word for brass (in the modern sense, *i.e.* alloy of copper and zinc) familiar from German *Messing*. The opinion that the Germanic word (MHG. *messinc*, *missinc*, Angl.-Saxon *maestling*, ON. *messing*, *mersing*) is derived not from Latin *massa* but from an Eastern source was long ago advanced by F. Kluge and O. Schrader, who pointed to Slavonic words such as Polish *mosiądz* for which Miklosich posed Slavonic **moseng'u*. The Persian word preserved by Narshakhī may well have been the source of the Slavonic word. As the vowels of *msnk* are unknown (*mising* ?) we cannot say whether it is a cross-form of *mis* 'copper' and *piring* (*birinj*) 'bronze,' later 'brass'; this was, *mutatis mutandis*, assumed already by Schrader."

[8] Veselovsky, *op. cit.*, 467, translated this "in the name of Ghiṭrīf," but Barthold, *Turkestan*, 207, rightly says that Narshakhī's words admit of no doubt; the coins were struck with the name upon them. No such coins have been found.

[9] For a summary of Islamic authors on the Ghiṭrīfī coins *cf.* H. Sauvaire, *Matériaux pour servir à l'histoire de la numismatique Musulmane* (Paris, 1882), under Ghiṭrīfī. Ya'qūbī, *Kitāb al-Buldān*, ed. T. G. Juynboll (Leiden, 1861), 73, says that the dirhems of Bukhara are like copper. Yāqūt, ed. F. Wüstenfeld, 1 (Leipzig, 1924), 519, says they are made of iron, copper صفر, lead آنک, and other metals. They were used only in Bukhara and vicinity. They had pictures on them but were Islamic coins, as were also the Muḥammadī and Musaiyabī dirhems. Ibn Faḍlān (ed. Zeki-Validi Togan, 5; Russian ed., 57), says they were made of copper, red copper, and yellow copper نحاس وشبه وصفر, and one hundred of them equalled one silver dirhem, which does not agree with Narshakhī. Maqdīsī, ed. De Goeje, *BGA* 3, 340, says one silver dirhem equalled six Ghiṭrifīs, in accord with Narshakhī. Al-Bīrūnī, in his *Kitāb al-Jamāhir*, *op. cit.*, 246, says, "The Ghiṭrīfī are nothing but *fulūs* (copper coins) struck of copper (with) a mixture in it." He then gives a poem about them.

Bukhara would not accept it. The government (*sulṭān*) became angry with them, and they took the money by compulsion. The exchange was established at six Ghidrifīs for one dirhem's weight of pure silver. The government accepted it at this rate (for taxes), so that it became current. Because of this the tax of Bukhara became heavy, for the tax of Bukhara in olden times was two hundred thousand silver dirhems, or a little less.[10] After Ghidrifīs were struck and became current at six for a dirhem's weight of silver, the government compelled the people to pay (taxes) in these Ghidrifīs. When the (*A:* price of the) Ghidrifī became dear, and it turned out that the Ghidrifī dirhem became equivalent to the silver dirhem, the government refused to accept the silver dirhems, but demanded the Ghidrifīs.[11] The tax of Bukhara rose suddenly from a little less than two hundred thousand silver dirhems to 1, [1] 68,567 Ghidrifī dirhems.[12]

Muḥammad ibn Ja'far relates that in the year two hundred and twenty [one hundred] dirhems of pure silver equalled eighty-five Ghidrifī dirhems.[13] Aḥmad ibn Naṣr says that in the year 522/1128 (only *A* has the figure complete), when he translated this book, one hundred pure silver dirhems equalled

[10] Veselovsky, *op. cit.*, 468, translates this, "which was a trifle." This interpretation is disputed by Barthold, *Turkestan*, 204, note 2.

[11] Gibb, *op. cit.*, 302, translates this sentence, "the government asked for silver and ghidrifīs (equally)."

[12] An alternate reading of the Teheran edition is 168,000. E. Blochet, *op. cit.*, 160, has 1,608,567. Barthold, *Turkestan*, 204, adds up the variants and proposes 1,168,567, which is the correct interpretation.

[13] Veselovsky, *op. cit.*, 468, adds صد, to read, "In the year 220, one hundred dirhems equalled eighty-five Ghidrīfīs." The reading is uncertain and we have no evidence from numismatics or from other texts. Barthold, *Turkestan*, 204, note 4, accepts the emendation of Veselovsky. Manuscript *A* adds sixty between the two hundred and the twenty, which might be interpreted, "in the year two hundred and sixty, twenty dirhems, etc."

seventy Ghidrifī dirhems. A red-gold mithqāl was equal to seven and one-half Ghidrifī dirhems.[14]

Muḥammad ibn Ja'far stated that this Ghidrifī was coined in the castle of Mākhak in the city of Bukhara.[15] The Ghidrifī coin contains more of silver than of the other alloys. It is said that there is one grain (*R* and *A:* "portion") of gold in each dirhem, and in every ten dirhems (*sic*) it is found in the amount from half a dirhem's weight to four and one-half *dāng*.[16] Many [of the copper coins called] *'adlī* (and) *pishīz*

[14] Manuscript *R*, Schefer's ed., and Gibb, *op. cit.*, 302, have در شرع, "in law a mithqāl was worth —." For a discussion of the economic significance of this passage see R. P. Blake, "The Circulation of Silver in the Moslem East," *HJAS* 2 (1937), 303–306.

[15] The name *Mākh* or *Mākhak* was given to a mosque in Bukhara, and possibly to the surrounding district as well. Yāqūt, *op. cit.*, 4, 380, says that the man for whom the mosque was named had been a fire-worshipper (*majūsī*), then became a Muslim and made a mosque out of the temple (*dār* ?). Sam'ānī, *Kitāb al-Ansāb*, 499 a, tells the same story and gives a list of prominent people of Bukhara with that name. A. Christensen, "Die Moschee Mākh in Buḫārā," *Orientalistische Litteratur Zeitung*, 7 (1904), 49–51, connects the word with *māh*, Persian "moon, month." The Sogdian form is *māχ*; *cf.* al-Bīrūnī, *Āthār al-Bāqiya*, ed. E. Sachau, 30, 46, trans. 34, 56. Whether this is to be connected with a moon cult, as Christensen thinks, is questionable; see V. Bartold, "Mesta do-Musulmanskogo kulta v Bukhare i ee okrestnostyakh," *Vostochnoe Zapiski*, 1 (Leningrad, 1927), 18. According to Bartold, 15–16, there were two mosques of Mākhak in Bukhara, one in the bazar of Aṭṭar, and the other in the Kurpi bazar. The mosque of Magok-Attar was excavated in 1935, and by stratification was dated in the ninth century A.D. A full report of the work has not been seen, but for a short notice of the excavation see *Sovetskaya Arkheologiya*, 3 (1937), 270.

[16] The Persian form of the word is *dāng*, Arabic *dāniq*; see the *Grundriss der Iranischen Philologie*, 1, 2. Abteilung (Strassburg, 1901), 63. This would be three-fourths of a dirhem. Walker, *op. cit.*, cli, note 2, indicates the absurdity of this, but fails to see the error. W. B. Henning called attention to this, and proposed a revised reading. If one dirhem contained one *ḥabba* of gold, obviously ten dirhems contained ten *ḥabba*, which is much less than one-half a dirhem. A *ḥabba* is 1/36 of a dirhem, hence one must read هژده instead of هرده. The original text, as reconstructed by Henning, must have read:

(=*fals*)[17] were struck in Bukhara by every one of the Sāmānid dynasty, and of the other rulers after the Sāmānids. These have not been mentioned, for there is nothing remarkable in it.

وگفته اند که در هر درمی یک حبه زر است [یا یک حبه و نیم] و در هژده درم بوزن نیم درم سنگ یا چهار دانگ و نیم باشد

"They say that in every dirhem there is one grain of gold, or one and one-half. In eighteen dirhems this amounts to one-half a dirhem, respectively three-fourths of a dirhem in weight."

[17] The ʻ*adlī* (the reading ʻ*adalī* is also possible) was a coin of small value, apparently an alloy. They were said to be in use in Daylam on the Caspian Sea coast. The exact value, or identification with coins which have survived, is unknown. For further information see Sauvaire, *op. cit.*, *JA*, 1881, 502, 506, also the glossary to the *Bibliotheca Geographorum Arabicorum*, ed. De Goeje, 4 (Leiden, 1879), 297. For a discussion of the meaning of the word see W. Tiesenhausen, *Notice sur une collection de monnaies orientales de M. le Comte S. Stroganoff* (St. Petersburg, 1880), 55–56. In Khwārazm in the thirteenth century A.D., they had a coin called عدليک. [Professor Zeki Validi Togan, Istanbul, in June 1948 told me there were two different coins in use in Khwārazm, the ʻ*adlī* and the ʻ*adalī*. He is at present making a special study of Medieval Khwārāzm.] *Pishīz* is another coin of small value. It is described as small in size. For literary references to it, including verses, see Ziya Şükûn, *Farsça-Türkçe Lügat* (Istanbul, 1946), 488. In a manuscript copy of the کتاب تحفه التعادة, a Persian-Persian dictionary, India Office manuscript no. 1294 (Ethé 2458), foll. 32 b, the following definition is found, which is not entirely clear:

بشيز باء فارسی مفتوح و شین مکسور مهری از نقره و درم ماهی ویک بایهء دانگ ای چهار مرحقه از دانگ که بتازی فلس گویند چنانچ شیخ سعدی فرماید بیت نیست سخا دادن بسیار چیز از درمی دانگ ز دانگی بشیز

"*Pishīz*, with a Persian b (*i.e. p*), vowel a, *sh* with an i, is a seal made of silver, also a *māhī* dirhem, a subdivision of a *dāng*, *i.e.* four ———— (?) of a *dāng*, which is called *fals* in Arabic. As Shaikh Saʻdī says, many are the things not bestowed with ease; from a dirhem a *dang*, and from a *dang* a *pishīz*."

I take *māhī* to be the word ماهه, ماهچه, or ماشه, which is one-twelfth of a توله, which in turn was two and one-half mithqāls in the last century. The value in Narshakhī's time is unknown.

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NUMISMATIC NOTES AND MONOGRAPHS

No. 114

BANK NOTE REPORTERS AND COUNTERFEIT DETECTORS

1826–1866

By WILLIAM H. DILLISTIN

THE AMERICAN NUMISMATIC SOCIETY

BROADWAY AT 156TH STREET, NEW YORK

1949

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NUMISMATIC NOTES AND MONOGRAPHS

Number 114

NUMISMATIC NOTES AND MONOGRAPHS is devoted to essays and treatises on subjects relating to coins, paper money, medals and decorations.

Bank Note Reporters and Counterfeit Detectors

1826–1866

WITH A DISCOURSE
ON WILDCAT BANKS AND
WILDCAT BANK NOTES

BY WILLIAM H. DILLISTIN

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
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Preface

FEW *references are found in the many works extant on the history of money and banking to certain interesting periodicals that circulated during the most formative period in the banking history of this country. The main purpose of these publications was to report the rate of discount at which locally uncurrent bank notes would be purchased in the more important trading centers. Known as bank note reporters and counterfeit detectors, they circulated and performed an essential function during part of the State bank note era which extended from the opening of the first bank in this country in 1782 to 1866.*

The National Bank Act originally passed in February, 1863, and revised in June, 1864, provided for a uniform national currency in order to displace the varied State bank notes then in circulation. Having provided for such a currency, Congress proceeded to make the issuance of State bank currency unprofitable by levying a tax of ten per centum on the amount of any such notes paid out by any bank. This prohibitive tax, effective August 1, 1866, forced the State banks to arrange for the prompt redemption of their outstanding notes and, in most cases, such banks converted into National banks. After that date the primary need for bank note reporters ceased. While a few continued in one form or another after that time and other counterfeit detectors came into existence, this history is confined mainly to the period prior to 1866.

The aim of this work is to furnish as complete a record of the subject as available source material makes possible and to shed some light on the circulating media of an important period in the nation's financial development. No such attempt appears to have been made heretofore. Many details and much descriptive matter have been included with the hope that it may contain some additional grist for the mill of the true student of banking history. It contains several references to, and descriptions of, closely related and contemporary

publications. The source material was in many cases the publications themselves, not a few of which have been personally examined by the writer.

The compilation of this information has been an interesting task which necessitated exhaustive research in a great many places. While the utmost care has been taken to make this work as complete as possible, it is not unlikely, when taking into consideration the ephemeral nature of these publications, that omissions will be found.

Many individuals have aided the author in the preparation of this study and merit his heartfelt thanks. His appreciation is especially extended to the many libraries and historical societies which have so graciously answered his many inquiries. He will feel amply rewarded for his efforts if this work contributes in some measure to the history of banking in the United States.

WILLIAM H. DILLISTIN

Paterson, New Jersey
July 1, 1949

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Bank Note Reporters and Counterfeit Detectors

I

EARLY BANKS AND BANK NOTE LISTS

THERE were no chartered banks in this country, as the term bank is generally understood, until the Bank of North America commenced business in Philadelphia on January 7, 1782, just eighty days after the surrender of Cornwallis at Yorktown. In 1784, the Bank of New York and the Bank of Massachusetts at Boston opened their doors for business. At the time of the adoption of the Constitution in 1787, these three banks were the only ones in operation in this country. During the next decade more than sixty other banks began operations; at least one in each state along the Eastern seaboard from Maine to South Carolina. In the early days deposits were a minor item in banking operations, the banks being banks of issue, and circulating notes which most banks issued were their chief earning medium.

As banking and trade developed and the notes issued by the many banks found their way into distant communities, need arose for a means of converting such notes into specie or available bank deposits. As a result of this need there grew up in the larger trade centers, exchange and commission brokers who would purchase, in most cases at a discount, notes issued by banks in other cities and towns. The development of this traffic in bank notes led to the publication in the newspapers of bank note lists which indicated the rate of discount at which notes of the outlying banks would be purchased by the brokers in important trading centers.

The notes issued by the early banks did not always possess the desired attribute of universal acceptability. If a Philadelphia merchant, for example, came to New York City with notes of the Bank

of North America and tendered them in payment for goods purchased, the dealer in New York might not be willing to accept such notes at their face amount. As a result, merchandise brokers in the important trading centers broadened their activities to include the purchase of uncurrent bank notes, that is, notes that did not circulate freely at their face amount.

Probably the first broker to engage in this business in New York City was Jacob Reed, jun., who had a place of business at No. 10 Burling Slip, foot of John Street. In 1786, when there were but three banks in operation in this entire country, he called attention in a newspaper advertisement to the location of his store, "where every transaction in the Commission and Brokerage business is done with punctuality and precision." He went on further to state, "Cash given for Philadelphia bank notes at a moderate discount." [1]

In 1790, Francis White of Philadelphia advertised as a dealer in paper money. He also called attention to the location of his office where, "Will be negociated all kinds of Paper Money and Public Securities, . . . , and such paper money and certificates furnished as will make payment at the Land Office equal to Gold and Silver." [2]

In 1791, Manuel Noah, another broker in Philadelphia, advertised that he "Buys and Sells Continental & State Certificates, Pennsylvania and Jersey Paper Money, and all kinds of Securities of the United States, or of any particular State." [3] The "Jersey Paper Money" no doubt referred to colonial notes of New Jersey, as the first bank of New Jersey was not established until 1804.

This type of advertisement continued for many years and several of these brokers broadened their activities to engage in the sale of lottery tickets. Many such places of business later became known as lottery and exchange offices. The operators apparently occupied much the same position in the community that the leading brokers do today, and several of them later combined the sale of lottery

[1] *New-York Packet*, August 7, 1786.

[2] *Gazette of the United States* (Philadelphia), November 6, 1790.

[3] *Ibid.*, February 9, 1791.

tickets with the publication of bank note reporters and counterfeit detectors.

In 1808, Solomon Allen, the son of a missionary preacher on the frontier in New York State and engaged as a printer in Albany, began the sale of lottery tickets to add to his income. In 1815, he and his brother Moses formed a partnership to conduct a lottery and exhange office in New York City.[4] Under the style of S. and M. Allen they conducted their business at 136 Broadway, and in a newspaper advertisement called attention to the "Grand National Lottery for the opening of a canal in the City of Washington." They also advertised that "eastern and southern bills" would be received in payment of lottery tickets at par.[5] In other words, their commission on the sale of such lottery tickets would be partly absorbed by the discount they might have had to take on the conversion or sale of notes which they received. In 1815, B. Jansen, who conducted a lottery and exchange office at 11 Chatham Street, New York City, as an inducement to further the sale of lottery tickets, advertised that bank notes not current in New York City would be exchanged at a moderate premium for lottery tickets.[6] In other words, Jansen was willing to allow a premium on uncurrent notes, thereby partly absorbing his commission on the sale of lottery tickets.

The various forms of paper currency in circulation in the early days of this country were a source of great bewilderment and confusion, not only to foreigners traveling here but to our own citizens as well. Some accounts of contemporary experiences vividly illustrate the confusion that existed.

The experience of a French visitor with Georgia bank notes in 1815 was summarized as follows:

It seems the little man had arrived from Cuba, with about eight thousand dollars in gold, which by way of *security* he lodged in one of the banks of Savannah.—When he came to demand his money, he was

[4] Henrietta M. Larson, *Jay Cooke, Private Banker*, 1936, p. 27.

[5] *New York Evening Post*, April 28, 1815.

[6] *Ibid.* August 15, 1815.

told that they did not pay specie, and he must therefore take bank notes or nothing. Being an entire stranger, and ignorant of the depreciation of paper money, arising from the refusal to pay specie, and from the erection of such an infinite number of petty banks in every obscure village without capital or character, he took the worthless rags and began his Journey northward. Every step he proceeded his money grew worse and worse, and he was now travelling on to Boston with the full conviction that by the time he got there he should be a beggar.[7]

The storekeeper as well as the broker was ever ready to exact a discount on his own part as evidenced by the following early newspaper account of an attempt to impose upon a laborer:

The traffic of buying up Bank Bills of other states at a discount has become so general, that advantage is taken of it to impose upon the poor and ignorant, by demanding a discount upon the Bills of Banks in the Northern parts of this state, which pass as current in this City as our own Bills. An instance of this kind happened no longer ago than yesterday. A poor wood sawyer received a two dollar note of the [Mohawk] Bank of Schenectady for his labour, and offered it in payment for some necessaries he had purchased for his family at a grocery and provision store. The storekeeper told him he could not take the bill unless he would allow him a discount on it. The sawyer thought he earned his money too hard, and had too many children to feed, to dispose of any part of it in that way, and returning it to the gentleman he took it from, telling him he could not pass it without giving a large discount, which he could not afford. The Bills of Schenectady Bank are as current as our own, and can be exchanged for New-York Bank city paper at any moment; a fact which this Grocer must have known. Those who thus attempt to impose upon the industrious labourer, deserve punishment as much as the man who extorts your purse from you upon the highway.[8]

In 1817, only two years after the war of 1812 had been concluded, thirty-nine families in England deputized an English writer to visit this country to ascertain whether any and what part of the United

[7] *The History of a Little Frenchman and His Bank Notes*, Philadelphia: 1815, p. 5.
[8] *New-York Evening Post*, October 5, 1815.

States would be suitable for residence. That writer, in the course of his travels in America, visited Cincinnati about November, 1817, and made these observations with respect to the banking and currency situation in that vicinity at that time:

> The town contains two chartered banks and one unchartered, all in respectable credit; a branch of "The United States Bank" is also just established there; the paper money system has gone beyond all bounds throughout the Western country. Specie of the smallest amount is rarely to be seen, and the little which does exist is chiefly *cut* Spanish dollars, which are divided into bits of 50, 25 and 12½ cents. Notes of 3¼d., 6½d., 13d. and 2s. 2d. are very common; indeed they constitute an important part of the circulating medium. I purchased Cincinnati notes in Pittsburgh at 5 per cent. discount, and Louisville notes at 7½. This does not proceed from want of faith in those banks, nor are the latter esteemed less safe than the former: the increase in discount arises from Louisville being 150 miles further distant. The same principle applies to every other town, and operates *vice versa* upon Pittsburgh. The paper of banks which are not chartered, or which are deficient in reputation, can be bought at similar distances from the place of its first circulation, at from 10 to 40 per cent. discount: had I sufficiently understood this *trade* when I landed in America, I think I could have nearly paid my expenses by merely buying in one town the notes of that to which I was going. There is no difficulty in obtaining them, as there is always a stock on hand at the shavers (brokers) and lottery offices.[9]

This same English traveler during his trip of about 5,000 miles in this country, went to a store in Washington to purchase a pair of worsted gloves which he stated were of the commonest kind and priced at half a dollar. The complications arising out of this seemingly commonplace transaction were related by him in these words:

> I presented a Philadelphia one dollar note; it would not be taken without a discount of 2½ per cent. I then tendered a Baltimore bank [note], of the same amount. This being one hundred miles nearer was accepted.

[9] Henry Bradshaw Fearon, *A Narrative of a Journey Through The Eastern and Western States of America*, 3d ed., London: 1819, pp. 232-233.

The store-keeper had no change; to remedy which, he took a pair of scissors and divided the note between us: I enquired if the half would pass, and being answered in the affirmative, took it without hesitation, knowing the want of specie throughout the country, and being previously familiarized with Spanish dollars cut into every variety of size. I now find that demi-notes are a common circulating medium.[10]

The brokers' advertisements previously referred to increased in number and scope as the number of banks increased, and they soon developed into what were commonly known as bank note tables and bank note lists. Such lists were published periodically in most of the newspapers throughout the country and showed merely the names of the banks, their locations, and the discount rate at which their respective notes would be purchased in the larger business centers. Lack of any centralized control over note issues led to wide fluctuations in the quantity as well as the quality of the notes as they circulated and strayed far from the places where they were issued.

In regard to discount rates, the statement was made in 1817 that, "New-York, the great commercial emporium of the United States, may best serve us as the standard place for fixing a value on the different bank notes of our country." The writer of this continued his remarks as follows:

It is well to observe, however, that the rates of exchange at New-York, do not fix the real value of the paper (in many cases) at the places where it belongs; for many banks whose notes are rated at a discount, pay specie as freely as any others—and, on the whole, the exhibit is rather calculated to shew the course of trade, *as to the notes of the good banks*, than to give a specific idea of the worth of such; . . . .[11]

The publication of bank note tables or lists had not come into very general use prior to 1818, as evidenced by a writer's comments regarding one of these lists that appeared in a Baltimore newspaper.

[10] *Ibid.*, pp. 287-288.
[11] *Niles' Weekly Register* (Baltimore), October 11, 1817.

Niles characterized the business as "shaving of bank notes," went on to state that the table was headed "Course of exchange," and indicated that it "may be useful to some of our readers and deserves preservation as a curiosity." That list contained the names of a few individual banks and the names of several cities in each of about twelve states together with the discount rate at which notes of the various banks in those states would be purchased by the broker who furnished the information.[12]

A week later Niles reproduced a bank note table issued by G. and R. Waite of Baltimore which firm also had offices in New York and Philadelphia. He stated that it "may be useful to our distant reader" and concerning the necessity for publishing such a table, worked himself into quite a tantrum, proclaiming: "What a business is this *shaving of bank notes!* But the misery of it is—that the loss falls upon the *productive poor,* to pamper the pride and feed the insolence of the *dronish* rich."

One of the earliest tables and probably the first to appear regularly in a newspaper of general circulation was published every Wednesday and Saturday in *The American* in New York City. The table which was entitled "Bank Note Exchange," first appeared in that paper on July 14, 1819.[13] It was corrected every Tuesday and Friday by Martin Lee, a Stock and Exchange Broker located at 44 Wall Street.

An example of conditions prevailing throughout the country in these early days is found in the following account of the financial situation in Ohio. In 1819, Ohio was comparatively a distant point from New York and reliable quotations on the notes of banks located there were not always available. An attempt was made to classify the banks on the basis of their standing in the community in the following manner:

We have for many weeks past looked in vain in the Ohio papers for

[12] *Niles*, August 8, 1818.

[13] A table entitled "Bank Note Exchange" was published in the *New-York Shipping and Commercial List* of July 18, 1817. (*See* p. 97.)

some information respecting the value of the different sorts of bank notes which are sent into this Territory from that state. A gentleman from Ohio furnished the following information. Seven banks described as Good, five as Decent, four as Middling and four were described as Good for nothing.[14]

The public soon created a demand for frequent and periodic information with respect to the discount rates on uncurrent notes. A Baltimore publication appears to have been called upon to furnish discount rates, according to the following notice:

> At the request of many friends at a distance, we have prepared a list of the prices of bank notes at Baltimore, which shall be corrected and re-published occasionally, or more briefly noticed as the case may require. The price of these *commodities* is becoming pretty regular and steady, except as to the bills of bad banks, which should be uniformly rejected, except in their several neighborhoods, wherein it is presumed that their value must be known.[15]

The varying rates of discount on bank notes opened up to the banks the opportunity to buy their own notes at a discount. In Maryland special arrangements were entered into with the note brokers, and it was not unusual for a bank to have agents traveling about for this purpose. After 1818, it became illegal in Maryland for any one to buy, sell or exchange any Maryland bank notes for a sum less than their nominal value, or to employ for the purpose any broker or agent. The law was ineffective and simply added a risk charge to the price asked for such notes.[16]

The note brokers, against whom there was an almost continuous fight, were subsequently licensed to operate in Maryland. In 1841, the fight against bill brokers and note shavers was renewed. The cost of their license was raised to $3,000 yearly and the penalty for exchanging and purchasing bills without a license was fixed at $500

[14] *The American* (New York), November 17, 1819.

[15] *Niles*, September 23, 1820.

[16] Alfred Cookman Bryan, "History of State Banking in Maryland," *Johns Hopkins University Studies in History and Politics*, Ser. XVII, Nos. 1, 2, 3 (1899), p. 68.

for each offense. The banks were released from all obligation to redeem their notes in specie for any foreign or domestic broker. The next year these conditions were mitigated to a considerable extent by a reduction of the license fee to $50. This was brought about by the inconvenience arising from the mass of depreciated and uncurrent paper money, chiefly of banks of other States, which by means of the brokers could be exchanged for reliable currency.[17]

The advertisements of the note brokers, together with newspaper announcements of discount rates on paper currency increased in number and scope as the number of banks increased. Bank note tables, beginning about 1820, became a regular feature in newspapers throughout the country, with the information furnished by the brokers and corrected frequently by them.

[17] *Ibid.*, pp. 108-109.

II

COUNTERFEITERS AND COUNTERFEITING

THERE are reports of the counterfeiting of paper currency in China as early as the eleventh century, so that it is not surprising that soon after paper money appeared in this country it was counterfeited. The Bank of England, established in 1694, was not confronted with the counterfeiting of its notes until many years after it commenced business. The following account of the discovery of the first counterfeit notes by "The Old Lady of Threadneedle Street" presents an interesting report:

The day on which a forged note was first presented at the Bank of England, forms a memorable era in its history. For sixty-four years the establishment had circulated its paper with freedom; and during this period no attempt had been made to imitate it. He who takes the initiative in a new line of wrong doing has more than the simple act to answer for, and to Richard William Vaughan, a Stafford linen-draper, belongs the melancholy celebrity of having led the van in this new phase of crime, in the year 1758. The records of his life do not show want, beggary, or starvation urging him but a simple desire to seem greater than he was. By one of the artists employed, and there were several engaged on different parts of the notes, the discovery was made. The criminal had filled up to the number of twenty, and deposited them in the hands of a young lady to whom he was attached, as a proof of his wealth. There is no calculating how much longer Bank notes might have been free from imitation, had this man not shewn with what ease they might be counterfeited. From this period forged notes became common. The faculty of imitation is so great, that when the expectation of profit is added, there is little hope of restraining the destitute or the bad man from a career which adds the charm of novelty to the chance of gain. The publicity given to the fraud, the notoriety of the proceedings, and the execution of the forger, tended to excite that morbid sympathy which, up to the present day, is evinced for any extraordinary criminal. It is, therefore, possible, that if Vaughan had not been induced by circumstances

to startle London with his novel crime, the idea of forging Bank notes might have been long delayed, and that some of the strange facts to be related would never have occurred.[1]

While no attempt will be made to review the complete history of counterfeiting in this country, it may be appropriate to present some of the many newspaper and other articles which show how prevalent it was during the State bank note era, and the need for some form of *counterfeit detector*.

Counterfeiting of paper money in this country began long before the inception of State bank notes. Bradford's *New-York Gazette* for March 13, 1726, contains this announcement: "Public Notice is hereby given that at Philadelphia they have found out some twelve shilling bills that are counterfeit. They are newly printed and very artfully designed."[2] Shortly thereafter the public was cautioned to beware of "false Jersey money" that was passing in Philadelphia. A detailed description of thirty shilling and three pound bills was given and the following statement was made: "It is supposed these counterfeit bills came to New York in one of the last vessels from England. A large sum is already past there."[3] The Continental currency also came under the evil eyes of the counterfeiters and many interesting accounts of their work on such currency may be found in *Historical Sketches of American Paper Currency*, Second Series, published by Henry Phillips, Jr., in 1866.

The dissemination of news about counterfeit notes in the early days was mainly through the press, and early newspapers contain many reports of counterfeits and counterfeiting. The Bank of North America in Philadelphia, which began business on January 7, 1782, was, as previously stated, the first bank organized in this country. It no doubt began issuing circulating notes shortly thereafter, as the Pennsylvania Legislature passed an act on March 17, 1782, making

1 John Francis, *History of the Bank of England*, 3d ed., London: 1848, I, pp. 170-171.

2 Henry Phillips, Jr., *Historical Sketches of the Paper Currency of the American Colonies*, First Series, Mass.: 1865, p. 16.

3 *Ibid.*, p. 87.

it a crime "to alter, forge, or counterfeit any Bank Bill or Bank Note or tender in payment, utter, vend, exchange or barter any such forged, counterfeit or altered Bill or Note of the bank."

The counterfeiters, then as now, lost little time in bringing into circulation imitations of new currency issued by the banks and the government. As a matter of fact, only fifty days after the reduced size currency, now in use, began general circulation on June 10, 1929, a ten dollar counterfeit note of this new series was discovered. As early as 1794 the Bank of the United States and the Bank of North America in a joint announcement cautioned the public to beware of counterfeit five dollar bills of the Bank of the United States and twenty dollar bills of the Bank of North America. The notice describes how the counterfeit notes differ from genuine notes, and indicates among other things that "The Signature of J. Nixon [President of the Bank of North America], has the appearance of being written with lamp-black and oil, ..." The notice states further, "It is supposed these forgeries were committed in some of the Southern States, as all the counterfeits that have appeared, have come from thence, and two persons have been apprehended in Virginia, on suspicion of being the authors of them." [4]

In 1795, the public was warned to beware of counterfeit bills of the Bank of New York, "one of 40 dollars, and one of 5 dollars, having been detected at the Bank, ..." [5] In Boston a news item informed the public that a most barefaced species of counterfeit ten dollar bills of the Bank of the United States had been discovered in that city. It went on to state, "the paper is coarse and heavy, without a water mark, Thomas Willing's name is wretchedly imitated, ..." [6]

Newspaper publishers in general believed that news of counterfeit notes was of considerable interest to their subscribers as evidenced by the following notice:

[4] *American Daily Advertiser* (Philadelphia), August 19, 1794.

[5] *The Daily Advertiser* (New York), January 3, 1795.

[6] *The Boston Gazette* and *Weekly Republican Journal*, August 28, 1797.

We stopped the press to insert a piece of information which must be esteemed eminently important to the Public. It is discovered that the Twenty Dollar *Albany Bank Bills*, have been counterfeited, and many of them are in circulation. Notice to this effect has been given to the Cashier of the Bank of New York, by the Cashier of the Bank of Albany. Not having received the specific marks that distinguish the counterfeit from the genuine, we can only mention it generally, to induce greater caution.[7]

The expansion of the note issues of the banks brought about an expansion of the crime of counterfeiting, which was a source of great annoyance and considerable monetary loss. The following account of the counterfeiting of notes of the Philadelphia Bank is no doubt indicative of similar conditions in other places at that time:

So serious had this become [the crime of counterfeiting], that in July, 1808, it was determined to change the whole form of the notes, which previously had been printed in ordinary types, and a committee was appointed to procure types with special devices for printing the notes thereafter. Bank officers, and particularly the cashier, were repeatedly sent to various places to testify against counterfeiters who had been arrested. Detectives were paid for hunting the counterfeiters, and a constable in 1809 was given $15 for making an arrest, while $100 about the same time was contributed "to assist in the arrest" of a notorious counterfeiter; and the Bank also gave liberally to the constables and to funds for this purpose.[8]

Further evidence of the prevalence of counterfeiting in the early days of this country is indicated in the following account:

For many years past the people of the Eastern States have been much vexed and injured by a gang of counterfeiters, chiefly rendezvousing in *Canada*, and detection was rendered more difficult on account of the impossibility of acquiring a critical knowledge of the numerous and dif-

[7] *Commercial Advertiser of New York*, January 10, 1800.

[8] *The Philadelphia National Bank, A Century's Record*, 1803-1903, Philadelphia: 1903, p. 42.

ferent notes in circulation. But, latterly counterfeits to a prodigious amount have been discovered on the banks of the middle states, some of which are admirably executed. If able to obtain a list and description of them, it shall have a place in *The Register*. It is stated that three persons were taken up at Washington city a few days since, one of whom had in his possession counterfeit notes to the amount of $62,000.[9]

A few years later these comments were made: "Sundry counterfeiters of bank notes have lately found 10 or 15 years honest employment in the penitentiaries of the several states. If their morals be not corrected, they will, at least, be kept out of harm's way."[10] A week later Niles referred to a statement by a judge to a jury that, "A fatal error seems to prevail that a person receiving a counterfeit note has a right to pass it." The judge stated further, "Let the counterfeit note be crossed, so that it may not deceive any other person."[11] The crossing of a note was done by drawing one or two heavy ink lines across the note, usually from each upper corner to the opposite lower corner. When genuine notes were crossed in this manner, it indicated that such notes had been redeemed by the issuing bank. About two years later Niles stated that:

> We can hardly open a newspaper without seemingly hearing a bellowing aloud of "*counterfeiters*"—"*more counterfeiters*"—"*more forgery*," and the like. What a pity it is that society should be so much demoralized, and so villainously cheated, for the benefit of a few dronish paper-lords—less substantial than "men in buckram?"[12]

There was no absence of news items pertaining to counterfeiting as evidenced by the notice: "It is with awful feelings, indeed, that we publish the terrible list . . . , of counterfeited and spurious bank notes, collected within the last eight or nine weeks, as we happened to meet with notices of such things in the newspapers."[13]

9 *Niles*, January 18, 1812.
10 *Niles*, July 6, 1816.
11 *Niles*, July 13, 1816.
12 *Niles*, September 19, 1818.
13 *Niles*, April 24, 1819.

Again on this same subject Niles states: "Counterfeiting goes on prosperously and presents itself in so many forms that it is exceedingly difficult to guard against it. We can hardly take up a newspaper without seeing some fresh evidence of the prostration of morals caused by the paper system." [14]

Further remarks by Niles on counterfeits were as follows:

> From all parts we still hear of gangs of counterfeiters or individuals detected, "too tedious to mention." How much of moral turpitude has the "paper system" heaped upon us!—*fraud* is called *speculation* and *counterfeits* denominated "pictures"—*perjury* is excused and *forgery* considered as evidence of courage! It appears to us quite reasonable to believe that not many less than 10,000 persons—paper makers, engravers, signers, etc. wholesale dealers and retailers of counterfeit money, are wholly or in part engaged in swindling the honest people of the United States.[15]
>
> The public should be exceedingly cautious in the receipt of bank notes, generally, unless well acquainted with them, just now. The counterfeiters who have been secretly busy for a long time, have sent a flood of spurious paper abroad, some of which so nearly represents the genuine bills, that it is exceedingly difficult to detect them.[16]

The following probably refers to the "pioneer" counterfeiter of State bank notes in this country: "According to the confession of Thomas Davis, who was lately executed in Alabama for counterfeiting, he had been 38 years [since 1785] engaged in that business, during which time he had made 600,000 to 1,000,000 of dollars." [17]

Accounts quite similar to the foregoing continued to appear in the newspapers and other publications during the entire State bank note era. It will be observed that all of them were published before a *counterfeit detector*, as such, appeared in periodical form.

It was not only with counterfeit notes that the handler of paper

[14] *Niles*, May 15, 1819.
[15] *Niles*, August 14, 1819.
[16] *Niles*, January 26, 1822.
[17] *Niles*, January 4, 1823.

money was concerned; he was also confronted in the ordinary course of business with other forms of bogus notes. It may be appropriate to describe briefly and illustrate several types of bogus notes that were foisted upon the public during the State bank note era. A *counterfeit* note has been described as one that resembles and has been copied from a genuine note. It is usually the same size, shape, pattern and similar in all respects to a genuine note. A *spurious* note has been characterized as a peculiar style of counterfeit and has been so termed due to the fact that it has been printed or engraved from an original plate although it bears no resemblance to a genuine note, except as to the name of the bank and the signatures of the officers. An *altered* note is usually one where the name of a reputable bank has been substituted for that of a suspended bank. Genuine notes upon which the amount has been raised to a higher denomination are generally referred to as *raised* notes. Further details as to several types of fraudulent notes are found in the following contemporary account:

There are now in circulation nearly four thousand counterfeit or fraudulent bills, descriptions of which are found in most Bank Note Lists. Of this number, a little over two hundred are engraved imitations of the genuine—and but few can be called good imitations—the residue being in point of general design entirely unlike the real issues of the banks whose names have been printed on them. These spurious—more properly altered—bills are generally the notes of broken or exploded banks, which were originally engraved and printed by bank note engravers for institutions supposed to be regularly organized and solvent; they consequently compare in point of engraving and general appearance with the issues of good banks. The circulating notes of many of these broken banks have been obtained after their failure, by dishonest persons, who have made a business of erasing the title and location of the broken bank, and inserting in its place, either by pasting or reprinting, the title and location of banks in good credit. The spurious bills thus made have been passed upon the public in large quantities, simply because the character of the engraving has a genuine appearance, and

because few takers of paper money, comparatively, are familiar with the genuine issues of all banks.

During the past year, the circulation of these spurious notes has increased to an alarming extent, an average of no less than ten per week having made their appearance.[18]

Counterfeit Notes

Two examples of the counterfeiter's art, among many others, are briefly described in *Day's New-York Bank Note List, Counterfeit Detecter and Price Current* for August 16, 1830. The five dollar note of the Paterson Bank (Plate I) is described as "5's letter C dated May 1, 1815," and the two dollar note of the Newark Banking and Insurance Company (Plate II) as "2's letter C. Jan. 9, 1822, pay to S. Nicholas,[19] Condit, President, Beach, Cashier."

It will be noted that the latter mentioned note bears two ink lines crosswise on the face of the note. This was usually done to indicate that the note was counterfeit, although it sometimes indicated that the note had been redeemed by the issuing bank and cancelled in the manner stated. The crossing of a note to indicate that it was a counterfeit is in contrast to the present day practice of imprinting the word "counterfeit" on the face of such a note with a rubber stamp. In the days of the Suffolk Bank and the National Bank of Redemption in Boston, the word "Counterfeit" was branded on the face of such a note by means of a hot iron.

Spurious Notes

Two notes, which on their faces purport to have been issued by the Bank of New York, present good illustrations of spurious notes (*see* Plates III-IV). These notes circulated in the 1840's and later, and bear no resemblance to genuine notes of the same denominations issued by that bank. In a contemporary counterfeit detector under the name of this bank and opposite the caption "50s and

[18] *The Descriptive Register of Genuine Notes*, New York, Gwynne & Day: 1859, p. 7.
[19] Should have probably read "D. Nichols."

100s" may be found the bald statement "Refuse All." This was an intimation to the holders of any notes of these denominations that they should be presented to the bank so that their genuineness might be authenticated. Another counterfeit detector in referring to these same notes states: "There are no genuine fifties with 'FIFTY' covering the left margin from side to side, and there are no genuine hundreds with a large 'C' on each side of the vignette."

Altered Notes

There were many clever operators skilled in the art of altering notes. Excellent examples of their handiwork are found in notes that were originally issues of The Central Bank of Tennessee. There is illustrated (Plate V) a genuine two dollar note of that bank with the main vignette depicting wagons loaded with baled cotton and drawn by oxen and mules. There is also illustrated (Plate VI) a note of the same denomination and of the same bank from which the words "Tennessee," and "Nashville," have been erased and the words "New Jersey," and "Hightstown," respectively over-printed thereon, thus purporting that note to have been an issue of The Central Bank of Hightstown, New Jersey.

It was the practice of these unscrupulous operators to obtain, at little or no cost, notes of banks that had failed and alter them so that they appeared to be the issues of reputable banks. They paid little attention to the relationship of the vignettes to the location of the bank as will be noted from the following descriptions. There are two notes illustrated (Plates VII-VIII), the first of which is a genuine five dollar note of The Central Bank of Tennessee, while the second note was originally the issue of the same bank and altered to The Central Bank of Cherry Valley, New York. That locality was the scene of a terrible Indian massacre in 1778. The main vignette on the five dollar note showing a number of soldiers taking refuge behind a rampart of bales of cotton (The Battle of New Orleans) was in no way connected with the historic background of Cherry Valley.

The Central Bank of Alabama at Montgomery also issued a five dollar note with a vignette showing the Battle of New Orleans, according to an 1857 publication. That publication pointed out in the following manner that notes of The Central Bank of Tennessee had been altered to The Central Bank of Alabama; "5's, Altered from the Central Bank of Tennessee; vig battle of New Orleans; the officers' names, J. A. Fleming, cashier, and H. H. Hubbard, president, are different on the genuine." [20]

Another example in the altered category is a two dollar note that purports to be the issue of the Andover Bank, Andover, Massachusetts. Part of the center vignette of this note depicts a cotton plant, at the left end there is a medallion of "Old Hickory" (Andrew Jackson), and in the lower right corner may be found the state arms of Georgia. This note was originally the issue of The Southern Bank of (Bainbridge) Georgia. Other issues of this bank were widely altered.

The practice of altering notes became so widespread that *Peterson's Philadelphia Counterfeit Detector and Bank Note List* for March 1, 1860, devoted a full page to "Dangerous Alterations." Among the many descriptions of altered notes, the following are typical:

Waubeek Bank Plates

Among the many spurious notes in circulation, there are none that are more calculated to deceive than those printed from the plates of the Waubeek Bank, Nebraska, engraved by Rawdon, Wright, Hatch and Edson, New York, and which are in the finest style.

Bank of Morgan, Geo.

The plates purporting to have been engraved for this fraudulent [Georgia] concern have been altered to a number of banks throughout the country.

Farmers' Banks

The plates of the Farmers' Bank, Wickford, Rhode Island, have

[20] *Lord's Detector and Bank Note Vignette Describer* (Cincinnati, September 15, 1857.

been altered not only to nearly all Farmers' Banks, but also to many other Banks in various parts of the country.

Commercial Banks

Plates and notes of the broken Commercial Bank of Perth Amboy, New Jersey, are being altered to nearly every *Commercial Bank* in the United States.

Following each of the foregoing there is a brief description of the various denominations of these bogus notes. It will be observed that in each of these cases, reference has been made to "altered plates." In the first two instances, *altered notes* of those banks are known to exist.

Altered Plates

Brief reference has heretofore been made to altered plates. Notes printed from such plates are less susceptible of detection than in a case where a genuine note has been altered. In the latter instance, when such a note is referred to in bank note reporters, after the description may be found this warning, "hold up to the light." By this means the holder may discern a certain thinness in the paper, particularly under the title of the bank, which in most instances indicates that the note has been altered.

In Petersons' reporter referred to above, under the heading "Union Banks," may be found this warning: "*Examine carefully* any $5 note having for a vig. a large V., with the heads of five Presidents grouped about it, ..." An extremely attractive $5 note of The Union Bank of Kinderhook (New York) dated October 7, 1858, is an excellent specimen of a note printed from the plate described. In this case, the alteration was probably accomplished by hammering out the name of the city or town in which The Union Bank was located and then engraving upon the original plate, "Kinderhook."

Altered notes and notes printed from altered plates were probably the worst hazards confronted by the merchant and the banker during the State bank note era. What little protection they had was

through the bank note reporters, wherein they would find under various bank names warnings of this type:

> 20s, altered from the Tenth Ward Bank, New York.
> 5s, spurious—whaling scene in an arch.
> 10s, spurious—vig. Neptune and a lady in a car, &c.
> 5s, altered from Waubeek Bank plate.
> 500s, from genuine plates, with forged signatures.
> 20s, vig. ships under sail; unlike the genuine.

Raised Notes

Bank of The United States *v.* Bank of The State of Georgia

In 1819, the Bank of the United States operated a branch, among several other places, at Savannah, Georgia. In February of that year it received from the Planters' and Merchants' Bank of Huntsville, Alabama, in the ordinary course of business and intermixed with other notes, the following notes of the Bank of the State of Georgia; 40 at 100 dollars each and 58 at 50 dollars each. These notes on February 25, 1819, were deposited by the Bank of the United States with the Bank of the State of Georgia with whom it maintained a reciprocal account, their transactions between themselves being almost exclusively in the deposit of their respective notes. About nineteen days later the Bank of the State of Georgia advised the Bank of the United States that the fifty dollar notes had been altered from five dollar notes and the one hundred dollar notes had been altered from ten dollar notes, and asked that they be reimbursed for the excess amount credited to the Bank of the United States.

At that time a total sum of $6,900 was due to the Bank of the United States, which sum included $6,210, the excess amount credited to it by reason of the fact that 98 notes of the Bank of the State of Georgia had been raised. The Bank of the United States refused to comply with the request of the Bank of the State of Georgia and in order to substantiate the sum due to it, the Bank of the United

States found it necessary to bring an action in the Circuit Court of Georgia against the Bank of the State of Georgia. At the trial the Bank of the United States:

> . . . offered evidence to prove, that the officers of the defendants, at the time of receiving the said altered notes, had in their possession a certain book, called the bank note register of the said Bank of the State of Georgia, wherein were registered, and recorded, the date, number, letter, amount, and payees' name, of all the notes ever issued by the said bank, by means of which, and by reference whereto, the forgeries or alterations aforesaid could have been promptly and satisfactorily detected; and further, that so far as related to the said notes purporting to be the notes of 100 dollars, all the genuine notes of the defendants of that amount in circulation on the said 25th of February, 1819, were marked with the letter A, whereas twenty-three of the notes of 100 dollars each, so received by the defendants as genuine notes, when in fact they were altered notes, bore the letters B., C., or D.[21]

Further evidence was presented by both sides and judgment was subsequently rendered for the defendants. The cause was brought, by writ of error, to the Supreme Court of the United States and Mr. Justice Story in 1825 delivered the opinion which reversed the lower court. The full opinion will not be reviewed; it may be of interest, however, to quote the following pertinent remarks of the Court:

> It [Bank of the State of Georgia] is bound to know its own paper, and provide for its payment, and must be presumed to use all reasonable means, by private marks and otherwise, to secure itself against forgeries and impositions. In point of fact, it is well known, that every bank is in the habit of using secret marks, and peculiar characters, for this purpose, and of keeping a regular register of all the notes it issues, so as to guide its own discretion as to its discounts and circulation, and to enable it to detect frauds. Its own security, not less than that of the public, requires such precautions.[22]

[21] *10 Wheat.* 333, 337 (U. S. 1825).
[22] *Ibid.*, 343.

A rather crude example of a raised note was that of a one dollar note of The National Bank of Paterson. A genuine one dollar note (Plate IX) of that bank is shown along with another genuine one dollar note of the same bank (Plate X) that has been raised to ten dollars. The workmanship on the raised note is of poor quality. It will be observed that two rosettes in which the figure "10" is centered have been cut from another note or notes and pasted over the "1" at each end of the one dollar note. It will also be noted that a small printed strip of paper reading "Ten Dollars," has been pasted over the words "One Dollar," in the center directly below the title of the bank.

Stolen Notes

The affairs of the banker in the State bank note era were not only in jeopardy through the prevalence of counterfeit and raised notes; he was confronted at times with a certain amount of risk through the handling of stolen notes. An interesting case pertaining to stolen notes occurred in 1817 as a result of The Salem (Massachusetts) Bank receiving in the ordinary course of business $8,500 in notes of The Gloucester (Massachusetts) Bank and presenting them for payment to The Gloucester Bank about fifteen miles away. The Gloucester Bank paid the notes when presented and about two weeks later discovered that the name of its president had been forged to several of them. Subsequently The Gloucester Bank brought an action against The Salem Bank to recover the amount previously paid and at the trial Cashier Allen of The Gloucester Bank testified that many sheets of their notes had been filled up (numbered and dated) and signed by him and locked up in a desk in the business room of the bank. He testified further that the key to the desk was always kept by himself and that the notes in question had been stolen from the desk by means of false keys in October, 1817, as he supposed, and the name of President Somes had been forged by some person unknown. The notes were dated either July 1st, 1814, or April 25th or May 1st, 1815, and had been signed by the cashier,

and not by the president, due to the fact that he seldom went to the bank because of ill health.

The court in rendering its opinion in this case stated that the plaintiffs were not entitled to recover, upon the ground that, by receiving and paying the notes, the plaintiffs adopted them as their own and were bound to examine them when offered for payment, and if they neglected to do so within a reasonable time, could not afterwards recover from the defendants a loss occasioned by their own negligence. In that case, no notice was given of the doubtful character of the notes until fifteen days after the receipt, and no actual averments of forgery until about fifty days. The notes were in a bundle when received, which had not been examined by the cashier until after a considerable time had elapsed. The court said further that:

> . . . the true rule is, that the party receiving such notes must examine them as soon as he has opportunity, and return them immediately. If he does not, he is negligent, and negligence will defeat his right of action. This principle will apply in all cases where forged notes have been received, but certainly with more strength, when the party receiving them is the one purporting to be bound to pay. For he knows better than any other whether they are his notes or not; and if he pays them, or receives them in payment, and continues silent after he has had sufficient opportunity to examine them, he should be considered as having adopted them as his own.[23]

The Court's opinion was summarized in the following words: "Where a banking company paid notes, on which the name of the president had been forged, and neglected for fifteen days to return them, it was held that they had lost their remedy against the person from whom the notes had been received." [24]

It will be observed that the Perkins' note, referred to later (Plate XI), bears one of the dates that Cashier Allen testified had been

[23] Gloucester Bank *v.* Salem Bank, 17 Mass. 1 (1820).
[24] *Ibid.*

filled in on some of the stolen notes. It does not appear unreasonable to surmise that this very note may have been part of the evidence submitted in this interesting case.

Broken Bank Notes *vs.* Obsolete Notes

The term *broken bank* frequently used in bank note reporters, newspapers, and other publications was applied to banks that had suspended operations during the State bank note era, and notes of such banks were commonly referred to as *broken bank notes.* There has been an erroneous tendency down to the present time to refer to *all* State bank notes still in existence as broken bank notes. Such a classification does not properly describe *all* such notes. It is no doubt correct to apply that term to notes of the State banks that failed prior to 1867; it is not correct, however, to apply that term to the solvent banks that had notes outstanding after August 1, 1866. Most of the banks in the latter group complied with the statutory requirements of their respective states, which placed a time limit on the redemption of outstanding notes, and some of those banks will redeem their notes or notes issued by their predecessors when presented today, notwithstanding the fact that in most cases they are not now liable for the redemption of such notes. All such genuine notes might today more properly be collectively known as *obsolete* notes, a term which includes the notes of *broken* banks as well as those of reputable banks. The term "obsolete notes" might also be aptly applied to notes still extant of railroads, canal companies, the Confederate States of America, Southern states, and miscellaneous corporations.

The Only Sure Guide to Bank Bills

Prior to the publication of bank note reporters and counterfeit detectors in periodical form, the dissemination of news of counterfeit notes, as previously stated, was mainly through the newspapers. In the latter part of 1805, the year in which Lewis and Clark com-

pleted the first recorded journey ever made across the continent, the number of counterfeit notes in circulation prompted Messrs. Gilbert and Dean, publishers of *The Centinel* (a newspaper) in Boston, to issue a "sheet" containing a description of counterfeit bills. This is probably the earliest reference to a *counterfeit detector* and is probably the earliest broadside on this subject. The publishers, a few months later, announced that, "the Public were highly pleased therewith; and doubtless reaped much benefit." The success of the sheet was followed by the publication, under date of June, 1806, of a small twelve page pamphlet entitled, *The Only Sure Guide to Bank Bills; or Banks in New-England; with a statement of Bills Counterfeited.* Due to the early date of this publication, it seems appropriate to give a somewhat detailed description of its contents.

In the preface to this pamphlet, the proprietors refer to the success of their sheet and state that "as the days increase, so FORGERIES also increase; and to keep pace with them, it is found indispensibly necessary to renew the Descriptions, with such *alterations, amendments, and additions,* as the exigencies of the times demand." The following additional reasons for the publication of this unique pamphlet are given:

> The necessity of having *Checks* against the inroads of cheats and villains, was never more apparent than of late:—For it very often happens, that the honest and industrious are robbed of their property and hard earnings, by the imposition of knavery—IGNORANT *of the method of detecting these Counterfeiters*, *and their accomplices*, the unwary and unsuspecting, are easily *taken in;* and to add to the aggravation, receive no remuneration for the losses they so sustain!
>
> A SURE GUIDE to *detect* BANK BILL *Impositions*, is, therefore, a desideratum at the present day;—it is indispensibly necessary.—Such a GUIDE, will be found in the following pages. Messrs. GILBERT AND DEAN, at the urgent solicitation of many friends, and with an industry, perseverance, and correctness, that does them great credit, have *altered*, *amended* and *added*, considerable, to the late sheet; and their im-

provements, so made, are herewith presented to the Public. If *any one should* SUFFER FOR WANT OF INFORMATION, *rather than buy a pamphlet*, the blame must attach to himself alone; and he will not receive that commisseration which in justice he ought.

Gilbert and Dean announced in this guide that there were 74 banks in the United States, 49 of which were located in the New England States. It contains a list of the New England banks together with the names of the President and Cashier of each bank and the denominations of notes issued by those banks. The denominations of the notes in circulation at that time were in much greater variety than now. The Union Bank of Portsmouth, New Hampshire, for example, issued notes in denominations of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, and 100 dollars. The Norwich (Connecticut) Bank issued among others a 25 dollar bill and the Essex Bank of Salem (Massachusetts) issued notes in the denomination of 30 and 40 dollars.

The guide also contained a brief description of some of the counterfeit notes then in circulation. A counterfeit bill of the Lincoln and Kennebeck Bank of Wiscasset (Maine) was described as follows: "The ten's in the margin, near the vessel on the stocks, have a workshop without *windows* in the counterfeits; in the true ones the *windows* are plainly seen; paper whiter and more spungy than the true ones." In the case of the Salem (Massachusetts) Bank, the announcement was made that four and six dollar bills purporting to be the issue of that bank were in circulation bearing the fictitious signatures of the President and Cashier. The further statement was made that the bank had never issued a four dollar bill and that the six dollar bill did not bear any resemblance to the genuine ones.

A New York bank teller in 1853 stated that, "the arts of the counterfeiter have been turned to a comparatively new branch of the profession," known as the alteration of bank bills. That writer was probably not aware of the following statements made by Gilbert and Dean in 1806:

In the case of the Maine Bank, at Portland; "Fifty Dollar Bills, a few in circulation, altered from five dollars." The Nantucket Bank; "Some 2 dollar bills altered to Ten Dollars." The Norwich Bank; "One dollar bills altered to *ten*—and well done." Twenty dollar bills of the Smithfield Union Bank of Rhode Island were announced as being in circulation, having been, "altered from a *one*—execution well done, but may be discovered from the word *twenty* in *figures*, which are very much crowded together."

The publishers refer to the branch of the Bank of the United States located in Boston and state that the bills of that bank come from the original bank at Philadelphia. They further state that, "Five, ten, twenty and fifty dollar counterfeit bills of the United States bank are in circulation." Following their reference to notes of the Bank of the United States the following statement is made: "All bills in Massachusetts, under five dollars, are of an oval form, and mostly of the [Perkins] Stereotype plate, so that it is impossible to alter them to any other denomination, without immediate detection." Under the reference to notes of the Essex Bank of Salem, this statement is found: "This Bank has recently issued bills from Perkins' beautiful Stereotype." In a notice of two new banks being incorporated in Massachusetts the statement is made that, "Their bills are to be done on Perkins' Stereotype, by order of our Legislature."

In July, 1806, one month after the date shown on their guide, Gilbert and Dean issued a three page postscript containing a description of many new counterfeits that had since come to their attention. In this postscript they made the following statement: "As there appears to be a new gang of villains combined together, who are *better workmen* than their *predecessors*, we may expect to hear of more counterfeits until they get routed—and all those which come to our knowledge shall be described as far as in our power, and communicated without delay."

No further results of the labors of Messrs. Gilbert and Dean along

these lines have been found and it was some twenty years after the publication of their interesting guide before a *counterfeit detector*, as such, came into general circulation.

Jacob Perkins

One individual quite conscious of the prevalence of counterfeiting was Jacob Perkins who took a prominent part in the art of bank-note plate engraving in the early days of this country. Examples of his work have been referred to previously (Plates XI-XII). He was born July 9, 1766, at Newburyport, Massachusetts, and as a boy was employed by a goldsmith who made dies for copper coinage of that colony. He was a versatile inventor and among many of his creations was a machine for cutting and heading nails in one operation. He designed a plate for a one pound note for the Bank of England. About 1823, he perfected improvements in the steam engine and later established an engineering business, which was carried on by his sons after he died in London on July 30, 1849.[25]

Perkins was probably best known for his invention of a stereotype steel plate for engraving bank notes, described by him as having been "made up of fifty-seven case hardened, steel dies, an inch thick, and keyed together in a strong iron frame, which is screwed firm to a metal plate of an inch thickness." [26] It was in this manner that Perkins found means for the important substitution of steel for copper plates in engraving bank notes, thus greatly prolonging the life of the plate. He boasted of the inability of counterfeiters to imitate notes made from his plates. Notes printed from Perkins' stereotype steel plates, however, *were* counterfeited as have been practically every form of bank note issued since that time. The reverse of a note printed from one of Perkins' Patent Stereotype Steel Plates (Plate XII) shows the care exercised by him in attempting to thwart the nefarious activities of the counterfeiter. While many of the notes

[25] H. P. and M. W. Vowles, "A Study in American Ingenuity and Intrepid Pioneering," *Mechanical Engineering*, Vol. 53, No. 11, Nov. 1931, pp. 785-790.

[26] Jacob Perkins, *The Permanent Stereotype Steel Plate*, etc., Massachusetts: 1806, p. 5.

printed from plates engraved by Perkins contained various designs and configurations on the reverse, such was not the general practice, as all but a small percentage of the notes then in circulation were issued with the reverse blank. It was not until late in the State bank note era that the general practice was adopted of embellishing the backs of notes with various designs and ornamentations.

One of his observations on the subject of counterfeiting in his early day was as follows: "In the United States, the practice of counterfeiting *bank bills* has really become a branch of adventurous speculation. Not unfrequently, upon the erection of a new bank, we are presented with counterfeit bills, before we have had opportunity to examine the real." [27]

A few months after Perkins' death a writer made the following statement regarding the invention for which he was most famous:

> One of the most important of his inventions was in the engraving of bank-bills. Forty years ago counterfeiting was carried on with an audacity and a success which would seem incredible at the present time. The ease with which the clumsy engravings of the bank-bills of that day were imitated, was a temptation to every knave who could scratch copper; and counterfeits flooded the country to the serious detriment of trade. Perkins invented the stereotype check-plate, which no art of counterfeiting could match; and a security was thus given to bank paper which it had never before known.[28]

Perkins' Transfer Press

It is interesting to note the striking resemblance of the practice followed by Perkins in 1806 in the preparation of plates from which bank notes were printed and the practice now followed by our Bureau of Engraving and Printing. As a matter of fact the machine now in use, known as a transfer press, represents the evolution and

[27] *Ibid.*, p. 3.

[28] "Memoir of Jacob Perkins," (From *The Boston Courier*), *The Bankers' Magazine and Statistical Register*, Boston, December, 1849, Vol. IV, pp. 472-476.

refinement of the process developed by Perkins. Perkins described this process in the following words:

This principle of making plates combines engraving, etching, and an exact imitation of the most difficult parts of block work, which has never before been produced. To prevent its being copied with blocks, engraving intersecting with the block work imitation is added, which gives an impression not within the power of the artist to produce from blocks. To execute this block work imitation, a long and laborious process is necessary, the expense of which could not be reimbursed, unless a great number of impressions were wanted. Circular dies, through which is fixed an iron axle, are first prepared, then intersecting lines are indented, and letters are sunk on their edges; they are then hardened, which contracts the steel; the impression is then made by these dies on the steel or copper plates, under the pressure of a strong, double jointed, moveable lever, invented for the purpose, being a new application of that power, the lateral motions of which are produced by fixing a wrench on the axle of the circular dies, and turning it backwards and forwards, till the cross lines and letters are sufficiently raised.[29]

The present procedure in preparing plates from which paper currency is printed is described as follows:

The design is reproduced in soft steel by engravers. Separate portions, such as the portrait, vignette, ornaments and lettering, are commonly engraved separately by specialists. Each works with a steel tool known as a graver, aided by a powerful magnifying glass. The finished engraving, known as a die, is heated in cyanide of potassium and dipped in oil or brine to harden it. The die is then placed on the bed of a transfer press, and, under heavy pressure, a cylinder of soft steel, called a roll, is rolled over it. The engraving is thus transferred to the roll, in the softer metal of which the lines of the original stand out in relief. Next the steel of the roll is hardened and the design is transferred to soft steel plates, again by rolling under great pressure. These plates, with the design in the intaglio or cut-in impression as on the original die, are hardened and cleaned, and are ready for the printer. The original die

[29] Jacob Perkins, *op. cit.*, pp. 5-6

may be used to produce numerous rolls, and each roll is available to make additional plates as those in service become worn.[30]

Abel Brewster

Abel Brewster, an engraver located in Philadelphia and a contemporary of Jacob Perkins, published a small pamphlet in 1810 entitled, *A Plan for Producing an Uniformity in the Ornamental Part of Bank or other Bills.* He indicated that it was useful, "where there is danger of forgery, and for furnishing the public with a convenient and infallible test for the same." He also recommended it "to the careful attention of all who would wish to promote the most effectual means for extinguishing the enormous evil of counterfeiting." In his pamphlet Brewster goes on to describe his plan and discusses a controversy he had with Perkins regarding Perkins' stereotype steel plate. Brewster claimed that Perkins had infringed upon his rights. Although Brewster stated in 1810 that "it is desirable that all Bank Bills in the United States should be uniform, in a considerable part" his suggestion, which might have reduced the amount of counterfeiting, was not adopted until a great many years later.

Bank Note Counterfeits and Alterations

In 1853, a bank teller of New York City, who chose to remain anonymous, published a treatise on the subject "Bank Note Counterfeits and Alterations: Their Remedy." His observations and suggestions for the prevention of these impositions have been considered of sufficient interest to warrant their inclusion in full. They were as follows:

The confidence of the people in the bank note currency of New York has never been so firm as at the present time. This confidence it is for the interest, not only of bank stockholders, but of the people everywhere, to retain and increase; and under its present general banking law, if its execution is given to competent, faithful and honest officers, confidence

30 *Facts about United States Money*, [U. S.] Treasury Department, January, 1948, p. 5.

everywhere in its paper issues will speedily be attained. Presuming, then, that the present law of New York is a good one; that if the securities deposited for circulating notes are received with the close scrutiny the law contemplates, no loss can hereafter fall upon the holder of its currency; that the millionaire and the poorest laborer alike, whether storing away at night well filled vaults or a single note, may sleep confident that the morning light will bring with it no news of sudden calamity or base fraud, by which the accumulations of years, or the hard earned wages of a day, are made but worthless rags instead of the money they represent; that this law is really worthy of all the confidence it may receive, there still remains a formidable obstacle to the use of our present paper currency. The difficulty, today, is not so much in obtaining the confidence of the people in the genuine issues of legalized banking institutions, as in determining which are these *genuine* issues. When the counterfeiter becomes so skillful that, with his work, he deceives, not only those unacquainted with bank notes and the usual method of detecting his issues, but good judges; when even bank officers, themselves, receive false issues with false signatures of their own bank without detection, as in a late instance that came under our observation; when there are counterfeiters at work in every town, thriving in their lawless occupations, and when each issue of the press announces a new and still more ingenious result of their workmanship; there would certainly seem to be danger that the whole system of bank paper for currency may yet have to be abandoned. In such a state of things, not only duty, but imperative necessity demands of the banker a remedy against so rapidly a growing evil.

Of late the arts of the counterfeiter have been turned to a comparatively new branch of the profession. The counterfeiter, the educated in his calling, and prince among the rascals of his clique, still finds his trade full of danger and difficulty. The most ingenious of the race, in many cases, find their work, if not themselves, detected long before a "good circulation" is obtained. Their work, often prepared with great care and with expensive tools, is frequently detected and announced before enough is issued to well pay the printer. The part of their trade, therefore, known as the "alteration of bank bills" presents them with unequalled attractions. With no necessity for tools nor any of the imple-

ments of the old fashioned counterfeiter, requiring only a few easily obtained chemical substances, a fine quality of glue, and a pair of scissors, to complete their kit, a few hours will transform many an insignificant one to tens and twenties, apparently as good as ever issued. In these alterations the engraver, instead of being a hindrance, is frequently of decided service to the counterfeiter. In many instances, using the same die and vignette indiscriminately for the small denomination of one bank and the large denominations of others, the engraver has already destroyed much of the aid association might furnish in the detection of altered bills. The counterfeiter, taking advantage of this fact, and clipping, at pleasure, a die or word from one bill, with little ingenuity can change the denomination of another. To these alterations the notes of all banks are subject, and no art of the engraver has yet proved a barrier to such tricks. Not only is the prominent die that denotes the denomination entirely abstracted, and a new one replaced, but even the fine lettering of the border and the centre, with equal facility are exchanged. If the engraver uses large letters, these disciples of Lucifer either extract the impression entirely, or themselves use a similar letter for bills not provided with the preventive. Black ink, red ink, large letters, borders and stripes, although at first of good service, in the end seem to facilitate rather than retard them in the profession they so perseveringly continue to practice, and the work goes on, filling their pockets, and fleecing many an honest laborer or tradesman. Yet there seems to be, comparatively, little effort to prevent such transactions. A thorough organization among bankers, and a fund provided for the purpose of detecting the counterfeiter, an effort to use but one, and that the best, kind of bank note paper, to increase the variety of engravings so that the same vignette shall not appear upon the issues of different banks, or at least upon notes of different denominations; to lessen the number and make more uniform the registers' signatures at the state department; these things, and others that may hereafter be suggested, would do much to make the business of the counterfeiter more difficult, and to assist in his detection. To prevent the alteration of bank notes a simple remedy exists, yet untried, and which we have the confidence to believe might, if thoroughly tested, prove a perfect preventive. The bank teller detects the worst alterations from association, and, if the prominent engraving of a note is

well remembered, he will not be deceived though the pasting process be done with the greatest degree of nicety. If, for instance, the vignette of some one dollar bill is known to be a blacksmith, the first glance at the engraving will convey to the mind its value, let the *apparent* denomination be what it may. If then, the engraver, in making up the plate for a one dollar note, *uniformly composes* the vignette of *one* and only one prominent object, the two, three and five, in like manner, always of *two, three and five* prominent objects; the ten always of *more than five*, and the twenty of *more than ten*, no matter what these objects may be, the poorest judge of money cannot be deceived with regard to their value. The fifty, the hundred, and the thousand dollar note do not circulate so generally, and are always received with more caution, so that alterations of that kind are comparatively uncommon. In order to make the bank note still more secure, every engraving, whether large or small, at the end or between the signatures, should also denote the denomination, until to alter a bill will be to deface its whole appearance. In engraving the different denominations of a bank, the vignette of the one should always be the smallest in size, the two, three and five gradually increasing, the ten covering one half of the length of the bill, and the fifty and hundred its whole extent. By this arrangement the engraver may add much to the beauty of a set of engravings, and need use neither the large red letters nor the heavy border, which so mar the general appearance of the bank note. We believe that thus, by the help of association, a preventive against all bank note alterations may be obtained, and we hope yet to see the plan tested by engravers and new banking institutions.[31]

Some idea of the prevalence of counterfeiting in New England in 1853 may be gained from the following account:

The whole number of counterfeits, including altered, or notes raised from one to ten, &c., and alterations of bills of broken to bills of good banks, for New England is eight hundred and eighty-seven; on the banks of Massachusetts, two hundred and eighty; on the banks in Boston, seventy-eight; and on the banks in Providence the large number of one hundred and thirty-eight. Considering the amount and variety of paper circulated by these banks, that of Massachusetts alone being seven-

[31] *The Merchants' Magazine and Commercial Review*, New York: July, 1853, pp. 72-74.

teen millions, and the great number of persons engaged in business pursuits, who can have but a limited acquaintance with it, it is not surprising that the "enemy" should have "sown," in such a "field" of operation, so bountiful a supply of "tares."[32]

A Lecture on Counterfeiters and Their Tricks

Mr. John S. Dye, a prominent publisher of books and periodicals, some of which will be described later, gave a lecture in 1856 on counterfeiters and their tricks. The lecture was illustrated by a panoramic display of bank notes on a large scale, and some of his remarks were reported as follows:

Mr. Dye said, that his object in these lectures was to explain the mode of detecting all classes of bad bills. The idea of describing counterfeit notes originated with a counterfeiter in Philadelphia, and it has ever since been turned to the advantage of this class of rogues.

There had been a suspicion, he said, that bank-note engravers were the makers of counterfeit money. But this is not so. There never was but one engraver who turned counterfeiter. The counterfeiters are not so numerous now as formerly. On account of the great difficulty they have to contend with in the excellent workmanship of genuine bills, they have turned their attention to making spurious and altered bills. For these they can use one plate for all denominations of bills of every bank in America. This is done by erasing the title of the bank and names of the state and town, and leaving a blank in the place of the figures and letters.

The true way to detect a counterfeit is not always by the signatures, but by the workmanship, which is generally coarse and rough. When a man takes a bill in his hand he should look at every part of it, particularly at the imprint of the engravers. It is well to look at the letters, to see that they are well formed. Most counterfeits can be detected by the imprint alone.

The panorama now moved, and on canvas, ten by fourteen feet, was exhibited a fac-simile of a genuine five-dollar bill of the Ocean Bank. Mr. Dye pointed out the beauties of the workmanship of the note, and

[32] *Willis & Co's Bank Note List and Counterfeit Detector*, Boston: December, 1853.

said that by the shading of the letters, in ninety-nine cases out of a hundred, a person could tell a good bill from a bad one. A counterfeit five on the Ocean Bank was also exhibited on the panorama, as the difference could be easily seen, even by an unpracticed eye.

The lecturer then explained the manner in which counterfeiters make plates and bills. The last new mode is to transfer by means of white wax. Even by the folds of the dress of the figures on the vignette the work is seen to be imperfect. Counterfeiters are generally satisfied if they can produce the general features of a bill.

The best counterfeit bill that was ever made was a fifty on the State Bank of Missouri. But it was imperfect in the shading, and was detected. A counterfeit note is the hardest thing in the world to make, because it must be perfect.

A five-dollar bill on the Farmers' and Mechanics' Bank of Hartford, altered from Pontiac, Michigan, was next shown on the panorama. It was calculated to deceive all outside of the bank. It was the note of a broken bank, but the plate had been a good one, and was engraved by Rawdon, Wright & Hatch, of New York.

The next shown on the canvas was a five on the Weybosset Bank, of Providence, Rhode Island. It was a Michigan bill, with the title of a genuine bank inserted. By looking close at the shading around the lettering, it appeared broken. Everything is complete on the bill, except that the counterfeiter altered it.

The most dangerous of all, a spurious note, was then exhibited. It was a three on the Mercantile Bank, Salem, Mass. Where counterfeiters have got hold of the genuine dies, they might alter that bill to every bank in North America, without altering the title.

The lecturer said that, some years ago, a certain captain got a plate engraved in New York for the Planters' Bank of Alabama. He brought good recommendations, and as it was customary in those days to allow the banks to carry away the plates, the customer obtained possession of the plate. He went to Lexington, Kentucky, and there joined a gang of counterfeiters. As there was no Planters' Bank of Alabama, they went to St. Louis, had Alabama beaten out of the plate, and Tennessee inserted. It then read "Planters' Bank of Tennessee," and thousands of dollars were made and circulated by the villains.

The panorama next exhibited a fifty on the Providence Bank, Providence, Rhode Island. It is what is termed a raised bill. The bill is genuine in every particular except the denomination, which was altered from "one to fifty." The counterfeiters probably did this work with a penknife and pen. It is important, to detect this class of bills, to look close at the letter *s* in dollars, to see if it has been added.

Another bill represented on the canvas was a twenty on the Manufacturers' Bank, Ware, Mass. It was an altered bill, and the entire end, where the word "twenty" occurs, had been extracted by a chemical process, and the paper was left almost as white as it was originally. It can be easily detected by looking at the end piece. This was a one-dollar bill. The "one" has been scraped off, and "twenty" printed in its place, leaving a whitish appearance around the letters. It can be detected by roughness all over the face.

In the course of his remarks, Mr. Dye alluded to the great improvements which had been made by bank-note engravers in the perfection of their work, which now defies the skill of the most ingenious counterfeiters.[33]

A Summarization

The general situation with respect to counterfeits, number of banks, and the confused and anomalous condition of the State bank currency was aptly summarized by a writer in 1864 in lending support of the National Banking System. He said:

> In a country like ours, where commerce is the chief pursuit, many social evils are directly attributable to radical faults in business, which are very easily corrected, and yet are allowed to exist for generations.
>
> For example, counterfeiting is a crime alarmingly on the increase, and one which leads to others of even worse character, and its very existence is due to the business of the country which tolerates such a system of currency as that with which we are afflicted.
>
> It is not too much to say openly, and from the results of observation and study, that our paper money, as it now exists, is an intolerable nuisance, unworthy the genius of a people making as high pretensions as Americans.

[33] *The Merchants' Magazine*, etc., New York: August, 1856.

In the State of New York are some three hundred banks, with a circulation, in June, 1863, of $32,000,000. Each bank issues notes of the various denominations from $1 to $500, and very frequently using several plates for engraving the same denomination.

In New England are over five hundred banks, issuing all sorts of notes, and in the Western and other loyal States are eight hundred more, making a total of sixteen hundred banks in the country, issuing notes.

Most of these notes are quoted at various rates of discount, from ⅛ per cent to 20, and even 40, per cent. Most of them are unbankable out of their own State; many irredeemable by reason of dangerous counterfeits; and these counterfeits in circulation by thousands—a premium on crime and rascality. Banks and brokers thrive, while the community is fleeced and annoyed.

There are no less than one thousand different kinds of bank-notes, which every business man in New York or New England is called upon to criticise and examine, and pay discount on, and suffer more or less from, in the ordinary course of trade.

We talk of the inconvenience of traveling on the continent of Europe, caused by the difference in the coins of each petty State, while the citizen of Pennsylvania or Illinois must visit the broker before he can visit New York or Massachusetts.[34]

Uniformity

While, as previously stated, Abel Brewster in 1810 pointed out the desirability of a uniform currency, many years elapsed before such a program was adopted. The Comptroller of the Currency in his report for the year 1912 (p. 24) stated that the Secretary of the Treasury had approved a plan for systematizing the designs on our paper currency and simultaneously reducing the size of all notes. He stated, "It is the purpose to make the notes more artistic and at the same time to give them added security in the circumvention of counterfeiting. The number of designs will be reduced from 19 to 9."

The plans approved in 1912 did not materialize until 1929 when, for the first time with the issue of what is officially known as "New

[34] A. K. Shepard, "A National Currency," *The Merchants' Magazine and Commercial Review*, January, 1864, p. 15.

Series," new and uniform designs were adopted for all paper currency. The United States Government now prints but three types of paper money, namely, Federal Reserve Notes, Silver Certificates and United States Notes. In these three issues the principle of denominational design is strictly followed. The back designs are uniform for each denomination irrespective of kind, and are uniformly printed in green. The face designs are characteristic for each denomination as regards the important protective features and the portrait assigned to the faces is different on each denomination. It was in this manner that some uniformity in the paper currency in circulation in this country was attained.

III

BANK NOTE REPORTERS AND COUNTERFEIT DETECTORS

BANK note reporters and counterfeit detectors[1] had a two-fold purpose: (1) to show the rate of discount at which uncurrent notes would be purchased or exchanged for specie in the more important business centers, and (2) to furnish a brief description of counterfeit, spurious, altered, and raised notes. The bank note lists, as previously described, merely showed the discount rate on uncurrent bank notes. With the banks of the country operating under different State and Territorial governments, a chaotic variety of notes, regulations, and degrees of security were presented, and as trade and commerce expanded, the number of banks and the volume of circulating notes increased, thus expanding the scope of the bank note lists and the prevalence of counterfeiting.

While the bank note lists were published at regular intervals, notices with respect to counterfeits in the early days were confined mainly to the newspapers. As previously stated, Messrs. Gilbert and Dean of Boston, about 1805, published a sort of counterfeit detector which does not appear to have continued very long. It was not until about 1826 that a combined bank note list and record of counterfeits appeared at regular intervals. Its publisher, Mahlon Day, an enterprising printer and book publisher in New York City, appears to have been the pioneer in this field.

Most of the bank note reporters appeared in periodical form although a few were published in newspaper style. Some of them did not enjoy a good reputation and many contemporary writers and latter-day historians were rather critical of the services and information they offered. Owing to their ephemeral interest the issue of a previous week or month was generally cast aside when a subsequent issue was received. Because of this practice relatively few

[1] Spelled "detecter" in the title of a few of these periodicals.

issues of these publications survived. These statements have confirmation in the following notice that appeared at the top of the cover page of one of these reporters:

> ☞ BEWARE! – As every number of this publication will contain, in addition to the present list, a description of all NEW COUNTERFEITS, this copy of the "DETECTOR" will be of no value, and will only calculate to deceive any person who may refer to its pages, after the new number is published.[2]

One rather unique feature of these periodicals was the form in which one's subscription might be entered. As each issue was published in complete form, independent of any previous issue, it was not necessary for a subscriber to refer to previous issues. The activity of one's business would appear to dictate whether one should be a semi-weekly subscriber, or whether quotations on the rates of discount and descriptions of counterfeit notes at greater intervals might suffice. *Sheldon's North American Bank Note Detector and Commercial Reporter* of Chicago, for example, was available, in 1853, semi-weekly at $4.00, weekly at $2.00, semi-monthly at $1.50 and monthly at $1.00 per annum.

The following accounts of experiences with paper currency and the use of bank note reporters illustrates the confusion and disorder that existed.

Early in 1838, meetings of the businessmen and citizens were held in the different towns in Iowa to consider the state of the currency, and to fix the rate of discount at which the so-called "good bills" would be received in commercial transactions. The territory was also deluged at that time with innumerable counterfeits of various banks, including a large issue of counterfeits on the State Bank of Indiana, as well as a countless number of forged notes and notes of banks which had no legal existence.

[2] *Bicknell's Counterfeit Detector and Bank Note List*, Philadelphia: Vol. IX, No. 7 (July 1, 1841), p. 1.

A committee appointed at one of the Iowa meetings prescribed the following rates of discount:

> At ten per cent., the notes of the Farmers' & Mechanics' Bank of Detroit, State Bank of Michigan, Farmers' and Mechanics' of St. Joseph; at fifteen per cent., the notes of the Bank of River Raisin, Erie & Kalamazoo, Clinton, Ypsilanti, Calhoun, St. Clair, Tecumseh, Washtenaw, Constantine, Macomb, Green Bay, Lake Erie & River Raisin R. R. Co., all other banks of Michigan and Wisconsin twenty-five per cent.; and the notes of *all other Banks* not receivable in the Galena Branch of the Illinois State Bank at ten per cent. discount.[3]

Mr. Charles Lyell, an Englishman, while traveling in this country, relates the following impressions of bank note reporters from his experiences in Philadelphia in January, 1842:

> Wishing to borrow some books at a circulating library, I presented several dollar notes as a deposit. At home there might have been a ringing of coin upon the counter, to ascertain whether it was true or counterfeit; here the shop-woman referred to a small pamphlet, re-edited "semi-monthly," called a "Detector," and containing an interminable list of banks in all parts of the Union, with information as to their present condition, whether solvent or not, and whether paying in specie, and adding a description of "spurious notes." After a slight hesitation, the perplexed librarian shook her head, and declaring her belief that my notes were as good as any others, said, if I would promise to take them back again on my return and pay her in cash, I might have the volumes.[4]

In 1843, a writer who styled himself "A Struggling Dealer" in a letter entitled "Spurious Currency," commented on the lack of protection to the public in regard to monetary affairs and made these observations on bank note reporters:

[3] Fred D. Merritt, "The Early History of Banking in Iowa," *University of Iowa Bulletin*, No. 15 (June, 1900), p. 34.

[4] Charles Lyell, *Travels in North America in the Years 1841–2*, New York: 1852, Vol. I, p. 171.

You cannot be a stranger to the load of counterfeit money that is forced into circulation by a banditti of reckless miscreants who reap a rich harvest by manufacturing and negociating fraudulent bills; this trade is now carried on to such an extent as often to deprive the honest man of the means of support. Their plans are facilitated by what are called "Bank Note Lists or Counterfeit Detectors"—and in my opinion, only serve them in their operations, for if the dealers had not these false guides they would be more circumspect in their operations of the money they take. I look upon these publications as impudent deceivers, and if they could be suppressed, or discontinued by the trading community entirely, there would be much fewer attempts to entrap the unwary, who foolishly place too great reliance upon their honesty.[5]

As travelers in foreign countries are confronted at times with currency exchange losses when going from one country to another, so was the traveler in this country, prior to 1867, forced to take losses when State bank notes constituted our principal circulating medium.

An interesting illustration of this situation (in the 1830's) is found in a letter addressed to the Hon. John C. Calhoun, then United States Senator from South Carolina, who had been at odds with President Andrew Jackson over the rechartering of the Bank of the United States. The writer of this letter, one of a series regarding the establishment of a national bank, discussed the variations in rates of exchange between distant points in the Union, and cited several arguments in favor of a universal currency; it read as follows:

Again: as worth a thousand speculative arguments, let me give you (what is no fiction) a condensed journal of a traveller who recently left Virginia for the west. Here it is:

Started from Virginia with Virginia money—reached the Ohio River —exchanged $20 Virginia note for shin-plasters and a $3 note of the Bank of West Union—paid away the $3 note for breakfast—reached Tennessee—received a $100 Tennessee note—went back to Kentucky—

[5] *New York Herald*, January 7, 1843.

forced there to exchange the Tennessee note for $88 of Kentucky money —started home with Kentucky money. In Virginia and Maryland compelled, in order to get along, to deposit five times the amount due, and several times detained to be shaved at an enormous per cent. At Maysville, wanted Virginia money—couldn't get it. At Wheeling, exchanged $50 note, Kentucky money, for notes of the North Western Bank of Virginia—reached Fredericktown—there neither Virginia nor Kentucky money current—paid a $5 Wheeling note for breakfast and dinner—received in change two one dollar notes of some Pennsylvania bank, one dollar Baltimore and Ohio Rail Road, and balance in Good Intent shin-plasters—one hundred yards from tavern door, all the notes refused except the Baltimore and Ohio Rail Road—reached Harper's Ferry—notes of North Western Bank in worse repute there than in Maryland—deposited $10 in hands of agent—in this way reached Winchester—detained there two days in getting shaved—Kentucky money at 12 per cent., and North Western Bank at 10.[6]

The problems with which the merchant was confronted are reflected in the recollections of William Earl Dodge, a wholesale dry goods merchant in New York City and later a member of the firm of Phelps, Dodge & Co. He was born in 1805 and died in 1883. In *A Great Merchant's Recollections of Old New York,* 1818-1880, he writes as follows:

In nothing is the change more marked than between the currency used during my early business life and that now in circulation. General Jackson had put his foot on the United States Bank, and we had nothing but banks chartered by the different States. Some had careful restrictions, others hardly any. Banks were chartered with capitals as small as $50,000, with no limit to their issues; and their great object was to get a location so far from convenient access that their circulation would not easily find its way back. Most of the country banks of respectability had agencies where they redeemed their bills at rates varying, according to location, from one-eighth to three-quarters or one per cent; but the banks in other distant states had no regular place of redemption, and their issues were purchased by brokers at all rates, from three-quarters

[6] *Lowndes Letters to Calhoun*, New York: 1843, pp. 60-61.

to five per cent. The notes of many of the banks far south and west were sold at five to ten per cent discount, and firms doing a large business had to keep one or more clerks busy in turning uncurrent bills into funds that could be here deposited. After the great depression that followed the financial troubles of 1837, many firms doing business south and west were compelled to settle with their customers by taking, as money, the currency that was passing in those sections, issued by banks which had suspended specie payment and yet kept up a large circulation, which could only be converted at a very heavy discount into money current in New York. A person starting from New Orleans for New York would have to change his currency several times in order to get funds that would be taken for fares or hotel bills. The country was flooded with all kinds of bank-bills, good, bad, and indifferent, and they became a perfect nuisance.[7]

It was necessary to exercise great discrimination as to notes of certain sections and certain banks and one historian informed his readers that:

The bank-note detector did not become divested of its useful but contemptible function until the national bank system was founded. It is difficult for the modern student to realize that there were hundreds of banks whose notes circulated in any given community. The bank-notes were bits of paper recognizable as a specie by shape, color, size and engraved work. Any piece of paper which had these came within the prestige of money; the only thing in the shape of money to which the people were accustomed. The person to whom one of them was offered, if unskilled in trade and banking, had little choice but to take it. A merchant turned to his "detector." He scrutinized the worn and dirty scrap for two or three minutes, regarding it as more probably "good" if it was worn and dirty than if it was clean, because those features were proof of long and successful circulation. He turned it up to the light and looked through it, because it was the custom of the banks to file the notes on slender pins which made holes through them. If there were many such holes the note had been often in bank and its genuineness was ratified. All the delay and trouble of these operations were so much deduc-

[7] *Valentine's Manual of Old New York*, No. 5, New Series, 1921, pp. 176-177.

tion from the character of the notes as current cash. A community forced to do its business in that way had no money. It was deprived of the advantages of money. We would expect that a free, self-governing, and, at times, obstreperous, people would have refused and rejected these notes with scorn, and would have made their circulation impossible, but the American people did not. They treated the system with toleration and respect.[8]

A warning to the community was issued in 1841 regarding the bills of two New York State banks in which the statement was made that these banks were highly recommended and puffed by one of the Wall Street prints and the observation was made that when such puffs were issued about any bank, it ought to be suspected. The statement was made that "these Wall Street prints have recommended every bank that has exploded during the last few years —and generally their recommendations have increased as the bank became weaker." The public was also warned against "Bank Note Detectors," published in New York City and Philadelphia which were reputed to have been published by mercenary brokers, who for a deposit of $500 or $1,000, would puff any distant bank into circulation, and leave it to cheat the public.[9]

James Gordon Bennett, publisher of *The Weekly Herald,* was quite critical of one of his competitors who he claimed was puffing notes of distant banks into circulation. He quotes from *The New York Tribune* of November 20, 1841, which referred to the notes of the Jacksonville Bank of Jacksonville, Florida, and Manufacturers' Bank of Ulster, New York, both of which were then being redeemed in New York City at 1½ per cent discount.

One week later Editor Bennett comments:

> We advise the public to be careful how they put confidence in these "Reporters" and "Bank Detectors," which inundate the community. These prints are more or less engaged in all the financial tricks of the

[8] William Graham Sumner, *A History of Banking in the United States*, New York: 1896, p. 455.

[9] *The Weekly Herald* (New York), October 30, 1841.

age. A short time ago, "Bicknell's Reporter," published in Philadelphia, announced the revival of the River Raison Bank, of Munroe, Michigan; and that its notes were received by the Ohio Life and Trust Company at Cincinnati. This statement is now contradicted by the Ohio Life and Trust, and no doubt the River Raison Bank, is one of those impudent speculations which are got up in conjunction with such fraudulent prints as "Bicknell's Reporter." [10]

The Weekly Herald (New York) of November 27, 1841, reprinted an article from *The Tribune* (no date) respecting the operations of two questionable banks, a rival newspaper having been accused of "puffing" the circulation of these banks. This account goes on to state in part that "if the mechanics and working men of our city are willing to be shaved and swindled, they shall consent to it with their eyes open. We say to them now that we never have seen so bold, so shameless an attempt to shave them as in this Jacksonville [Florida] Bank operation." *The Tribune* went on to state that "we have twice been induced, by the solemn assurances of men we believed honest to give some countenance to this sort of illegitimate banking. In each instance the result was a miserable failure, with loss to ourselves and other holders of the notes." This account continues:

Now if the Rothschilds were to set up a bank at a distance, and undertake to puff its notes into circulation here, buying them in at a discount, we should say to every reader, "touch not a dollar of it!" The banker may be solvent and honest, but the system is fraudulent and ruinous.

If the Jacksonville Bank were a *bona fide* and sound institution, it ought not to think, it would not think, of circulating a dollar of its notes in this city. The simple fact that extraordinary means are taken to give its notes currency proves them unsafe. The whole proceeding bears meditated villainy in legible characters on its face.

The *Tribune* article also refers to notes of the Manufacturers' Bank of Ulster which were bought by all brokers in Wall Street at ½

[10] *The Weekly Herald*, November 6, 1841.

per cent discount, and questions the right to put such notes in circulation when they could not be redeemed at par except at their place of issue. *The Tribune* inquired further, "Is it not a grievous wrong, then, to put such money in circulation, and keep it under par merely to make a profit by shaving it? We appeal to every honest heart for an answer."

It was only a few weeks later that John Thompson's *Bank Note Reporter*, a full account of which will appear later, began publication. *The New York Herald* announced its beginning and referred to comments by one of its competitors who "attempts to discredit this new 'List,' and characterizes it as being published by 'bears.'" The account continues as follows:

> There is a reason for this attack. A few days ago, Captain Morgan, the President of the Jacksonville Bank, called upon Mr. Thompson, and asked him—"W-w-w-won't you put in the Jack-Jack-Jack-Jacksonville Bank into your list?" "No," replied Mr. T. "I shall quote no banks that have been broken, and get revived; I'll have nothing to do with any shinplaster concerns. I mean to publish a correct and honest bank note list.". . .
>
> Mr. Applegate, the printer in Ann Street, had a similar scene with Mr. Thompson, and told him knowingly—"Mr. Thompson, it will be for your interest to treat the Jacksonville bank right." "I certainly shall treat it right," replied T., "and put it down among the broken banks revived for a reason." Mr. Applegate looked blank.
>
> These revivals of broken banks are too much like the revivals of some—sinners—it begets back-sliders of the very worst kind. Take care of them.

The real story back of this bank, which was chartered by the Legislature of Florida, is that it had suspended more than a year before the above dialogue took place, by an act of the Legislature of Florida annulling its charter in February, 1841.

The New York Herald for January 20, 1842, reprints an article from the *St. Augustine* (Florida) *News* of January 8 regarding the

Jacksonville Bank. This article states in part that "we have on a former occasion adverted to this Bank, and the efforts now being made, to revive the circulation of its bills, by creating in New York an impression that the institution is solvent," and continues as follows:

> *The New York* . . . , contains the advertisements of several dealers, who offer to take its notes at par in trade, and a promise is holden out, that the bills will be redeemed by the Editor of that paper. We have not at hand, the statement which was made, when it closed, showing its liabilities—but we recollect distinctly the assertion then made, that it never had any thing like specie to redeem one tenth of its issues. These issues were excessive, and of course, the holders of its notes, suffered materially by its failing to pay them. This distress was particularly felt here and in our sister city Jacksonville, and the bills instead of being the issues of an Institution suspending alone from motives of self preservation, were then worthless promises to pay, of one utterly and absolutely insolvent. The bills are utterly valueless—scarce any portion of the stock was ever paid in, in specie, and the effort now being made to create a value for its issues in New York, is only preparatory, to their being again issued in Florida, and the men duped by their hollow promises to pay.

The New York Herald of the same date then comments editorially:

> It will be seen from these facts and opinions, that everything we have ever published, warning the community against receiving the shin-plasters of the Jacksonville Bank, are true to the letter. We have plenty of other facts to produce whenever Morgan, the President, is ready to bring on his action against us for the $10,000 damages. But these are certainly enough to make the community avoid all shin-plasters, particularly after the deplorable results we have just seen in Cincinnati and Louisville.

While "to puff" and "to blow" have certain synonymous characteristics, this similarity did not apply when the condition of certain banks was under discussion. Some operations pertaining to

"puffing" have just been related, and the following serves to illustrate the opposite of those situations.

In 1858, the Litchfield (Connecticut) Bank suspended and in the course of an investigation, subsequent to the suspension, it was testified that a sort of "hush money" had been paid to some publishers of New York bank note detectors. The court of inquiry in its report to the Bank Commissioners summarized the situation in the following manner:

> Your petitioners further aver, that they are informed and verily believe, that large sums of money have been paid by said Litchfield Bank to bank note detectors in New York, in order to give currency to the notes of said Bank, and enhanced a fictitious value to its capital stock, and that of the money so paid; according to a memorandum furnished by the Cashier of said Bank to the President, and by him to your petitioners "there has been paid $833.66 as follows, to wit: to Monroe, $33.66; Dye $166.67; Taylor $133.33; same parties $500. more, which was added to the engraver's bill—which accounts for the bill as it stands." The cashier, E. L. Houghton, also stated that Rumsey (the first owner of the bank) agreed to pay these detectors $1,000, not to blow the bank.[11]

Major Hoyt Sherman, who was born in Ohio in 1827, settled in Des Moines, Iowa, in 1848, and was there engaged in the banking business for many years. In the 1850's, he stated: "It was a queer mess of stuff that floated around as money in that early day, and the banker who handled it had to keep himself posted, not only as to its quotable mark in the *Bank-Note Reporter,* but it was also necessary to know what particular state bonds were deposited for its redemption, their market value, which was an uncertain and fluctuating figure."[12]

Sherman described a bank note reporter in the following manner:

[11] *Litchfield Enquirer*, November 25, 1858.

[12] Hoyt Sherman, "Early Banking in Iowa," *Annals of Iowa*, 3d Series, Des Moines: Vol. V. No. 1 (April, 1901), p. 7.

The literature of the profession, at least as far as the West was concerned, was confined to the monthly publication of bank note reporters and counterfeit detectors, the principal one of which, and in fact the standard authority, was Thompson's Bank-Note Reporter, published in Wall street, New York City. Each monthly issue was closely scanned for items of interest connected with the business, new banks and their officers, others in liquidation, with the varying discounts on their notes, and especial attention was given to the description of new counterfeits, of which each issue had a number. The body of the work contained titles of banks of issue of each state, arranged alphabetically, and following the title of bank and name of president and cashier, came a list of counterfeits against the different denominations of bills of that bank, and in some cases this list was a very long one, describing dangerous issues of every size from Ones up to Fifties, and in many cases the bogus imitation resembled so closely the genuine, that the bank was compelled to call in all notes of that denomination and issue others on a new plate. The Reporter was always a familiar feature of the banking office, and placed within easy reach of the teller for frequent reference.[13]

In a paper read before the Milwaukee Bankers Club entitled "Reminiscences of Banking in Wisconsin in Early Days," H. H. Camp, president of the Milwaukee Trust Company, made these remarks regarding bank note reporters:

The merchant in his store or the peddler on the prairies would as soon think of doing their business without scales, measure, or yardstick as without a "Thompson's," or some other bank note reporter of recent date and a coin chart of all the known coins in the world. The successful dealings in the various kinds of bank note currency required great experience, for without the requisite knowledge the dealer was subject to the continual tolling of his money in every subsequent transaction. The liability for losses on money by rates of discount, however, was small, compared with the losses by counterfeit money and constantly failing banks.[14]

[13] *Ibid.*, pp. 9-10.

[14] *The American Banker*, December 2, 1896, p. 2480.

In 1855, a writer appealed to the Massachusetts Legislature against the use of small bills and made these observations with respect to bank note reporters:

. . . how large a part of the community can begin to distinguish between good money and bad? Who stops even to examine? Who does not "go it blind?" Possibly if you offer a new or strange-looking bill for groceries, the grocer's boy wastes his time and yours by consulting that most popular of the monthly journals, the *Counterfeit Detector*. How that periodical grows and flourishes! It bids fair to rival Webster's Dictionary in size, and eclipse it in practical utility. Did you ever consider what this curious detective literature proves? If you see the scalps and tails of a thousand foxes nailed to a board fence, you judge that the hen-roosts of that neighborhood must have suffered serious depredations. If you notice that fresh ones are continually added, you may suppose that those depredations are going on still. But my comparison does not run on all fours. To make it do so, I must not suppose that scalps are nailed to the fence, or anything which proves that the thievish animals have been killed, but only that hair enough, pulled from the tail, is exhibited there to prove their existence and something of their complexion.

The *Counterfeit Detector* is like a powerful optical instrument. It reveals to you, through the darkness of human hypocrisy, a dim outline landscape of a great system of counterfeiting, by which, however, you may know with perfect safety that it is nearly as extensive as our vastly ramified system of banks, and may be regarded as an image of that system reflected from the mirror of the depraved classes.[15]

A few months after *Peterson's Philadelphia Counterfeit Detector and Bank Note List* first appeared in 1858, one of his contemporaries who had been in this business nearly twenty years, and who appears to have enjoyed a good reputation as a publisher, expressed some concern regarding the competition in this business. The following account appears in his publication:

There is quite a competition at the present time in the business of publishing COUNTERFEIT DETECTORS. New works of the kind are

[15] *An Appeal to the Legislature For an Ounce of Prevention* (Boston: 1855).

constantly springing up, with a great flourish of trumpets, puffing, advertising, "newspapering," etc. And, what is very amusing, the publishers of every new enterprise of the kind, endeavor to make the public believe that *their* work is in all respects vastly superior to *all other Detectors ever before published*—more reliable, more correct, has greater facilities, more sources of information, etc. etc., until, we should suppose, the public had learned by this time, just about the value of all such "windy" demonstrations.

The fact is, more depends upon the industry and purity of intention of the publisher and his assistants to make a good, reliable Detector, than all the facilities, correspondents, puffing, etc., that can be named. What is necessary to be done is to give all the new counterfeits, and properly to quote all banks. In these respects all honest Detectors are much alike. Sometimes one Detector may have an item or two that others have not; and then the others may have something that it has not. The principal difference consists, perhaps, in the objects which the different publishers have in view or the purposes to which, in part, they devote them. If their object is to sustain a certain clique, or party, or certain banks, in which the publisher is interested as owner, in part, or agent, and to debase or discredit others that may be rivals, then they cannot receive the confidence of the public, and are altogether unreliable.

Correct information is what the people want, unbiased by any interested motives, or improper influences. To give this, requires close attention to passing events in bank matters, careful and personal supervision, and a constant look out for counterfeits, frauds, rogues, etc.

Messrs. WORK, MC COUCH & CO., who attend to the corrections of this Detector, have as great facilities for information, and are as well posted up on bank notes and banking matters, as any other house in Philadelphia, and do a very large business in the exchange of bank bills from all parts of the country; and besides, they are not the men to attempt to bolster up any institution unworthy of credit: hence their quotations can be safely relied upon.

A good deal has been lately published in the newspapers about "BLACK MAIL DETECTORS." There may be such for aught we know; but we have no personal knowledge of any such. We have not taken

any notice of this matter before, nor do we now for the purpose of accusing others; but we have thought it best to say to such as do not know us personally, (for where we are known it is not necessary), we have never allowed this Detector to be used for any such vile purposes; nor have we ever been approached more than once or twice in the twenty years that we have been in the business with any improper propositions. Perhaps the "bogus" bank makers have been unaware that all such approaches would be useless. Our sole aim has been to give the very best work of the kind that could be got up for the use and benefit of the whole public.[16]

Robert Adams, Jr., a member of Congress from Pennsylvania, in a speech before Congress made the following remarks regarding bank note reporters:

I hold in my hand Van Court's Bank Note Reporter, showing the rate of discount on different bank notes in the years 1856, 1857, and 1858. In conversations with my father, who was one of the old-time merchants of Philadelphia, I have heard him say that it was absolutely necessary for every merchant and storekeeper from one end of the land to the other to subscribe for these detectors in order that he might know the rate of discount on the money which he took over his counter. That was a tax on every merchant and storekeeper; but did the evil end there? Not at all. For, when his correspondent came to pay for the goods which he had bought, the merchant was obliged to receive his money at whatever disadvantage, because it was a question of accepting this debased currency or losing his customers.[17]

Regardless of the nature of one's business, the matter of settling debts in the currency of the period frequently presented difficult problems. A stock broker who operated in New York City in the 1850's gives an interesting account of his experience with a questionable bank note reporter. He relates the details of having sold some stock to an operator named Slocum, who, failing to make payment at the agreed time, announced that he was "in deep waters." A com-

[16] *Van Court's Counterfeit Detector, and Bank Note List*, July, 1858.

[17] *Congressional Record*, June 5, 1894, pp. 5790-5792.

promise was effected and the broker accepted Slocum's note for $1,000 in full settlement. The most interesting part of this transaction as related by the broker himself is presented herewith:

While sitting in my office, the morning before the panic of October 13th [1857], a tall, lathy man, with a bilious smile, walked in, and said that he had been informed that I held $1,000 of Slocum's paper. I produced the note in question, when he remarked again that Slocum was "dead broke," and would never pay a cent, but he wished to use the note as an offset, and was willing to pay something for it, perhaps as much as five per cent.

After the due amount of haggling, the bargain was struck at ten per cent., and my visitor counted down one hundred dollars in five's and ten's, looking suspiciously new, on the Bentonville Bank, Illinois. To my remonstrances against the character of the money, he produced, out of his coat pocket, a Bank Note Reporter, published the day before, in which, the notes of that bank were quoted at only one per cent. discount. As this rate took off but one dollar from the hundred which lay upon the table before me, nothing more was said, and the tall lathy man and note vanished through the door-way.

I hastened to the office of an acquaintance, who bought Western bank bills, and on whisking my hundred dollars over, and studying the vignettes, he gave a long doubtful whistle, and said the bills were not salable in New York, but that he would forward them to his correspondent at Chicago for redemption, though his own private opinion was, the bank was a "wild-cat," and the currency was "stump-tail and red-dog." The bills went to Chicago by express, and in due time, something like the following letter came back in reply:

Chicago, October 18th, 1857.

To . . . .   , No. . . . . Wall Street, New York.

My Dear Sir: . . . . Your valued favor of date 12th inst., received, and also package of ($100) one hundred dollars, bills of the Bentonville Bank, per express. In reply, I visited Bentonville day before yesterday, and found it a small hamlet, consisting of three houses and a grocery store, situated on a prairie, about ten miles from the railroad. The back

part of the grocery store was occupied by the bank, but as this institution has now suspended operations, the President and Cashier have gone to Chicago. I saw no safe or other evidences of cash, and so conclude the assets are now in the breeches pocket of the President and Cashier.

The bills have only a nominal value in our market of from 2 to 5 per cent. We cannot, today, pay you over 2 per cent., should you wish to sell them.

My expenses to and from Bentonville were fifteen dollars, which I have charged to you.

Yours Respectfully,
C. D. CULLENDER.[18]

The *Cincinnati Gazette* (no date) presents an account of an Indiana bank in a rather picturesque manner. It relates that in June, 1859, the Cincinnati police succeeded in breaking up a bogus bank at Hartford, a town in the back country of Indiana, called the "Manufacturers' Bank," and arrested one Williams, the alleged proprietor. The article continues as follows:

The officers took an account of the "stock," which inventoried as follows: About $600 in 1's, 5's and 10's of the Manufacturers' Bank; one trunk, (which represented the "safe,") two shirts, one vest, and two sections of a flute! The entire catalogue, except the bills, was subsequently attached for a board bill due the village justice. Williams, before he knew who the officers were, (for they passed themselves off as "financiers,") explained that the bank was got up by parties in New York and Detroit; that he, Mr. Williams, was the "banker," and the only person to be known in the matter; that they paid $165 for the engraving of the bills, and that $70,000 had been printed at a cost of a quarter of a cent on the dollar; that he came to Hartford in February last to open his bank, but that the want of a few hundred dollars had hitherto prevented his opening. He further said that they had everything right with the publishers of a certain New-York Counterfeit Detector, as they had *paid them nineteen hundred dollars to quote the money right!* The bills were

[18] Wm. W. Fowler, *Ten Years in Wall Street*, Hartford: 1870, pp. 110-112.

intended to be circulated "away out West," so that it would be difficult for them to come back for redemption.[19]

The foregoing accounts tend to show the reputation and standing of bank note reporters over their relatively short period of existence. While many of the accounts related give them a bad reputation, there were several publishers whose reputation and standing was of the best and under no circumstances could they be prevailed upon to "puff" a bank or not to "blow" a bank.

[19] *The Bankers' Magazine and Statistical Register*, New York: August, 1859.

IV

WILDCAT BANKS AND WILDCAT BANK NOTES

WILDCAT banking was prevalent during most of the State bank note era and this narrative of bank note reporters would be quite incomplete without some reference to this unrestrained type of bank and the bank notes issued by them. "Wildcat" has been defined as—"not sound or safe; unreliable; irresponsible;—applied esp. to unsound business houses, enterprises or methods; as, a *wildcat* bank, mine, scheme; *wildcat* currency, such as issued by a *wildcat* bank . . ." and a "*wildcat* bank" as one which, before the enactment of the National Bank Act in 1863, issued notes in excess of its capacity to redeem them.[1] Wildcat banking was an eventful phase of our banking history and one that has not had much attention in histories of banking.

In the period prior to the expiration of the charter of the Second Bank of the United States in 1836, banking business in this country enjoyed a very distinct monopoly. A charter to operate a bank could not be obtained in most States without a special act of the legislature and the legislators were jealous of their prerogatives. The granting of bank charters under such special acts was subjected to many forms of favoritism and partisan spoils. The State frequently reserved to itself the right to subscribe for shares of stock, and substantial cash bonuses were frequently exacted.

In the late 1830's, the "free banking system" was developed, and, as the name implies, it permitted an individual or a group of individuals to engage in the banking business after complying with a few general conditions. In most States the requirements were quite unrestrictive in scope which resulted in a great increase in the number of banks in the country, many of which were organized by in-

[1] *Webster's New International Dictionary of the English Language*, 2d ed., 1945.

dividuals with little or no capital and with little or no thought in mind of serving the public.

As previously stated, the early banks were banks of issue, and the issuing of circulating notes was their principal source of profit. This was the case with most of the banks organized under the free banking laws. The first move of many organizers after getting their bank notes ready was to find a locality in which to circulate them remote from the point of issue, so that their return for redemption should be as tedious and difficult as possible. As a result of this, many of these banks were located in the depths of forests where there were few human habitations, but plenty of wildcats. Thus, as one writer describes them, they came to be known as "wild-cat banks." [2]

A rather picturesque description of a wildcat bank was given by a pioneer of Iowa in the following words:

> I visited one of these banks once. It was in a logging camp in the thick woods near the east shore of Lake Michigan. It was about eight feet square, eight feet high, made of rough boards, flat roof, with one small sliding window, a plain board shelf, on which the notes were signed, a small door, over which, in red chalk, was the name of the bank. It was never occupied but once. When I saw it, the bank had closed.[3]

Hon. Millard Fillmore, Comptroller of the State of New York, in a circular dated May 2, 1848, stated that "a practice has grown up under the general banking law of establishing banks in obscure places, in remote parts of the State, where little or no business is done, with a view of obtaining a circulation merely, and doing no other business."

Another description of wildcat banks was found in the following account:

> These banks were usually located in inaccessible places, many in the northern wilderness, where white men seldom trod, and only an Indian

[2] Horace White, *Money and Banking*, 5th ed., New York: 1914, p. 327.

[3] Howard H. Preston, *History of Banking in Iowa*, 1922, p. 59.

guide could find. In some instances they were located within an Indian reservation, and had but a shanty for a bank. This condition could not long continue unmolested. The discount on the notes depended upon the "get-at-a-ble" location of the bank. The notes being redeemable in gold, were picked up, assorted, and the so-called "carpet-bagger" sent out by the brokers to demand the coin, provided he could find the bank. Sometimes, when coming too near, a woodsman on the watch would meet him, and by intimidation or threat the hunter for coin would retrace his steps without venturing to make his demand.[4]

Under date of November 15, 1857, Col. Thomas H. Benton addressed a letter to the editors of *The National Intelligencer* in which he commented upon "free banking." He said that the hard money democracy was accustomed to call that form of banking "free swindling." Anybody could become a banker that pleased, issue small notes and send them off to a distance to be circulated and lost and to sink upon the heads of the laboring people.

Benton said further that it was a favorite plan to issue notes at one place payable at another far off, and difficult to be got at, so as to compel the holder to submit to a shave. He attributed that method of doing business to a Scotchman of Aberdeen in 1806, and sarcastically commented that *he* was in Great Britain and not in the United States and that the British Ministry and the British Parliament immediately took cognizance of the inventor and his imitators and placed them all in the category of swindlers, and so put an end to their operations.[5]

Wolves, Panthers, and Wildcats

The origin of the term "wildcat" as applied to bank notes is attributed by another writer to a very early period and to a somewhat more logical source. He relates that on December 23, 1816, the Governor of Missouri Territory approved an Act, "To encourage the killing of wolves, panthers, and wildcats." The act provided that a

[4] John Jay Knox, *A History of Banking in the United States*, 1903, p. 747.

[5] *The Bankers' Magazine*, etc., New York: January, 1858, pp. 561-562.

premium be paid to any person who shall kill any wolf, panther, or wildcat within ten miles of any settlement in the territory. The rate of such premium in the case of wolves and panthers which shall exceed the age of six months being two dollars, if under that age the sum of one dollar and in the case of wildcats the sum of fifty cents each, regardless of age; to be paid out of the county treasury in which any such animal shall have been killed. The act provided further, "That any person killing a wolf, panther, or wildcat as aforesaid, shall exhibit the scalp with both ears, . . . to some justice of the peace within said county, . . ." the justice being directed to execute a certificate in the following form if he was satisfied that the exhibitor was entitled to a premium; "I, A. B. a justice of the peace, . . . do hereby certify, that the sum of .... is due to C. D. as a premium for his killing a wolf, panther or wildcat (as the case may be) and the treasurer of the county is hereby directed to pay the same to C. D. or bearer."

The most interesting part of this early act is the further provision that any such certificate "shall be a legal tender for any county taxes levied within said county, and shall be received by the sheriff or other person collecting any county levy within the same." These "wildcat certificates" came to be used as currency and led to the name of "wildcat" being given to other kinds of currency that were not redeemable in specie, and being specially applied to the bills of the non-specie paying banks in the adjoining territories.[6]

In an action against the state of Missouri a few years later with respect to the issuance of promissory notes, the following comments were made regarding another form of "certificate," in the same locale:

> The states may borrow money, and give notes; but that is not coining money, nor is it emitting bills of credit; and so "Wolf and crow scalp certificates" are only evidence that the counties in the states which

[6] Breckinridge Jones, "One Hundred Years of Banking in Missouri, 1820-1920," *The Missouri Historical Review*, Vol. XV (January, 1921, No. 2, p. 359).

authorize them owe so much money for meritorious and beneficial services.[7]

Carpet-Bags and Saddle-Bags

Another writer stated that the practice of establishing banks in isolated places in order to evade the redemption of notes also gave rise to another popular term, "saddle-bag" banks.[8] They were banks whose notes were carried about the country in saddle-bags or carpet-bags.

The State banks, in their efforts to attain profits, resorted to every possible scheme to put their notes into circulation as well as to prevent their speedy return for redemption. In a speech on *The Money Question,* delivered in August, 1875, at Indianapolis, the Hon. William D. Kelley described the efforts used by bankers to keep their notes in circulation, and gave a rather detailed description of a "carpet-bagger." Kelley was 61 years old at that time and a Member of Congress. He served as such from 1860 to the time of his death in 1890. He made a great many speeches and appears to have been a man well versed in banking and finance. The speech referred to above was published in full some three years later and his comments concerning carpet baggers were as follows:

> Do you know where the phrase "carpet-bagger" came from: The younger men of our day think it was invented to describe a man from the North who went South and got an office. Oh, no; not at all. The older members of my audience will attest the truth of what I say when I state that the phrase "carpet-bagger" arose from the fact that nearly every specie basis bank had its carpet-bagger—a fellow it sent with notes by the carpet-bag full into some distant State to get them into circulation there. If he could buy cattle, corn, hogs, or something else in which there might be a profit, he was to enter into a treaty with the carpet-bagger or other officer of some bank out there for an exchange of notes. For instance: The Frogtown bank, for I am told there were banks lo-

[7] Craig *et al. v.* The State of Missouri, 4 Pet. 424 (U. S. 1830).

[8] William O. Scroggs, *A Century of Banking Progress*, New York: 1924, p. 51.

cated occasionally in almost impenetrable swamps, and in those days, you must remember, there were no telegraphs and but few railroads—the fellow from Frogtown would get way out into Skunktown, another almost inaccessible place, and he would effect an exchange of ten, twenty, or thirty thousand dollars of Frogtown bank notes for a like amount of Skunktown bank notes, and the Skunktown bankers would put off the Frogtown notes on their customers, and the Frogtown bankers would put off the Skunktown bank notes on theirs, and thus they would go on with this legitimate business to their common advantage. I am giving you a historic fact when I tell you that I first became acquainted with that term in designating those fellows who were traveling from one out-of-the-way place to another with a carpet-bag full of notes to exchange, so that the notes put in circulation in Skunktown couldn't find their way back to Frogtown, because the people in Skunktown didn't know where Frogtown was, and the people in Frogtown didn't know where Skunktown was, and if they did they couldn't get there; the people in one place couldn't get to the other to get the specie on which the notes were based. Then after the bank at Frogtown had paid out the Skunktown notes, the bank at Frogtown would refuse to receive the Skunktown notes, but it would send the holder, who was its debtor, around the corner to a broker, who would buy them at seven or nine per cent. discount, and then the broker and the bank would divide the proceeds of this gold basis transaction. That is a specimen of what was going on all over the country.[9]

In a speech before the North Carolina Bankers Association, entitled "The Resources of North Carolina," delivered in Raleigh in June, 1899, Col. Burgwyn, a National Bank Examiner, made these remarks regarding State bank circulation:

It generally came back to its home more quickly than the parent institution wanted it back. No piece of information could be more annoying to the ante-bellum banker than the news that a stranger was in town with a suspicious-looking carpet-bag in his hand; for it generally contained a bag full of notes of his bank for redemption; for which the

[9] William A. Berkey, *The Money Question. The Legal Tender Paper Money System of the United States*, 2d ed., Grand Rapids: Hart, 1878, pp. 151-152.

ubiquitous stranger demanded gold or silver or New York exchange at a premium. I believe the carpet-bagger was a familiar personage to the banking fraternity of North Carolina long before the days of reconstruction, ...[10]

Bank Note Appellations

Many descriptive and somewhat facetious names were applied to the varied issues of paper money during the State bank note era and most of them can no doubt be classed as part of the slang of their respective periods. While "rags" was a term quite generally applied to all forms of paper currency by the "hard money" advocates in the early part of the nineteenth century, the most common term applied to notes of the questionable banks was "wildcat."

Before the days of the wildcat banks certain Colonial notes bore descriptive names dependent upon the color of the printed scrip. The *Maryland Journal* of December 31, 1782, stated, "The House is against taking either *black* or *red* money in payment for taxes,. . . ." In an advertisement in the same paper of January 14, 1783, the following statement was made, "Specie, State certificates, Continental State, *black* or *red* money, pork, corn, wheat or tobacco, will be taken in payment." [11]

Some of the many names applied to wildcat and other paper currency were shin-plasters, redbacks, bluebacks, greenbacks, red dog, red horse, blue pup, bob tail, rag tag, brindle pup, and stump tail. In most cases there is information available having some bearing on the derivation of those terms. The origin of the word "wildcat" as applied to banking is related by another writer to a bank in Michigan which had on some of its notes a vignette representing a panther, familiarly known there as a *wildcat*. This bank failed, having a large amount of its notes in circulation, which notes were afterwards referred to as *wildcat* money, and the bank issuing

10 *The American Banker*, June 21, 1899, p. 1095.

11 Richard H. Thornton, *An American Glossary*, Philadelphia: 1912, II, 730.

them as a *wildcat* bank.[12] As previously stated the more logical origin of the word "wildcat" is found in the account of the issuance of certificates of a legal tender nature as a bounty for the killing of wolves, panthers, and wildcats in Missouri in 1816.

"Shin-plaster" was referred to by the same writer as a cant term for a bank note or any paper money, and especially such as had depreciated in value. The term is said to have arisen during the Revolutionary War after the Continental currency had become almost worthless. An old soldier who possessed a quantity of it, which he could not get rid of, very philosophically used it to bandage a wounded leg. The term has more generally been used to designate notes and scrip in amounts of less than one dollar.[13]

There were several periods prior to the Civil War when such obligations were in quite general circulation, especially when banks were not on a specie paying basis. They took the form of tickets, due bills, and promissory notes and were in many instances the private obligations of merchants, manufacturers, and others whose business required them to "make change," when subsidiary silver coins had largely disappeared from circulation.

The demand for some form of fractional currency became acute at the start of the Civil War and in 1862 Congress authorized, first, the use of postage stamps for change; second, a modified form of postage stamp called postal currency; and finally, fractional paper currency in denominations corresponding to the subsidiary silver coins.[14] The highest amount outstanding of such fractional currency at any one time was slightly more than forty-nine million dollars and the report of the Secretary of the Treasury as of June 30, 1877, shows that more than twenty million dollars of such currency was still outstanding as of that date.

[12] John Russell Bartlett, *Dictionary of Americanisms*, 4th ed.; Boston: 1877, pp. 758-759.

[13] *Ibid.*, p. 583.

[14] *Coins and Currency of the United States*, Office of the Secretary of the Treasury, June 30, 1947, p. 16.

Redback money was a term applied to bank notes of certain New York banks organized under the Free Banking Act of 1838. These notes had on their backs a large red decorative stamp. The *Albany Argus* (no date) is quoted as having said that a panic existed in the early part of 1841 in New York with respect to the free banks. The article under a heading, "*Red Back associations,*" stated: "The panic in relation to 'red back' notes which pervaded the public mind for several days, may be said to have reached a crisis yesterday. Down to Monday inclusive, 13 of these institutions had stopped payment. . . ."[15]

It may have been with reference to the account in the *Albany Argus* quoted above that Cashier F. E. Spinner of the Mohawk Valley Bank of Mohawk, New York, directed a letter to the editor of that journal under date of March 17, 1841. Spinner transmitted a copy of the bank's statement of condition as of March 8 and pointed out, ". . . that we could on that day have redeemed more than three-fifths of our whole circulation in specie and current funds. . . ." He also stated that, "our stockholders are of the wealthiest farmers in our county, the stock is paid in, and the institution is managed with a view to safety rather than large profits." He continued with these interesting comments:

> Our stockholders are with one or two exceptions ardent and influential democrats (as indeed is the case with most of the neighboring free banks) and it is very unpleasant for me to be obliged to make explanation to them for the ungenerous flings that are daily thrown out by the democratic press against the "Red Dogs" as they seemingly call them—it certainly can do us no good either pecuniously or politically.

In closing his letter he said, "the notes of this bank have at all times been redeemed either at New York or Albany at a rate not exceeding one half of one per cent."[16]

[15] *Niles*, March 20, 1841.

[16] Letter Book, Mohawk Valley Bank, January, 1841–April, 1843.

With respect to some of the terms applied to early bank notes we find that in 1838 this statement was made: "Michigan money is thus classed—First quality, *Red Dog;* second quality, *Wild Cat;* third quality, *Catamount.* Of the best quality, it is said, it takes five pecks to make a bushel." [17] *The Brooklyn Eagle, and Kings County Democrat* for October 26, 1841, in addition to the usual Bank Note Table contains another table listing seventy New York banks under a heading entitled "Red Back Money." In this table, notes of the Mohawk Valley Bank are quoted at a discount of ⅝ per cent. Under the New York General Banking Law of 1838 many new banks came into existence. The public did not consider notes of those banks with redbacks as safe as those issued by the old banks, and stigmatized the banks as *red dog* banks, and the currency as *red dog* money. In Michigan the term *blue pup* money was applied to bank notes having a blue stamp on their backs. [18] It is not unlikely that the "red horse," "redback," and "brindle pup" notes have a close relationship to the "red dog" money of New York. "Bluebacks" was a term commonly applied to notes of the Confederate States and "greenbacks" was the name by which the "demand notes," first issued in 1861, and the "legal tender notes," first issued in 1862, were known. The later type note, officially known as a "United States Note," still circulates with a greenback.

A Philadelphia bank note reporter in 1839 reprinted the following from the *New York Journal of Commerce* (no date):

There is an institution (City Trust and Banking Co.) under this title somewhere in this city, organized under the Free Bank Law, and which we believe put forth some bills with the Comptroller's endorsement according to the provisions of the law. It has also sent out a parcel of mongrel notes on the Mississippi plan, with the appearance of bank notes, but "payable in six months," provided that the bank can find it convenient when the notes are presented for payment. We saw half a dozen one dollar notes of this description which were sent back from Georgia,

[17] *Niles*, June 2, 1838.

[18] Bartlett, *op. cit.*, p. 518.

signed A. Abbot, Cash. J. B. Manson, Pres. They could not be sold here at any rate. So look out, and do not take for genuine "Red Dog," that which has no red about it.[19]

The notes referred to in the foregoing were known as "post notes," that is, payable at some future time and not on demand, the period frequently being three, six, nine, or twelve months. (*See* Plates XIII-XIV.) The issuing of such notes usually indicated that the bank was borrowing upon time and was probably extending its business beyond safe limits. Notes of this type were found to present peculiar temptations for unsound banking. About three months before the two dollar note that is illustrated became due, a bank note reporter entered the word "fraud" opposite the name of this company, in the column where the discount rate is usually found.[20] A post note of The Globe Bank of New York was likewise described in the same reporter, while the notes of The New-York Loan Company were described as "no sale." (*See* Plates XV-XVI.)

The following notice by Charles Corkery, a merchant of Dubuque, Iowa, appeared in the *Iowa News* of April 14, 1838. It indicates the nomenclature applied to notes originating in States to the south and east of Iowa and the light in which they were viewed by him:

NOTICE

Tis better from evil well forseen to run,
Than perish in the danger we may shun.

My specie traps and Benton bullets being exhausted, I became overpowered with "Wild Cat," and in my own defense have shut the doors of my menagerie.

Now that I have got the animal conquered, those of my old friends and customers who are in debt to me will please favor me with a few more specimens of the breed. In the future, however, I will prefer the

[19] *Philadelphia Reporter, Counterfeit Detector and Prices Current*, Vol. I, No. 11 (December 3, 1839).

[20] *Clark's New-England Bank Note List, and Counterfeit Bill Detector*, Boston, July 4, 1840.

Sucker, Puke or Hoosier Tame Cat, and occasionally one of the old domestic species of Buckeye or Corncracker. In a few days my doors will be thrown open to public patronage, but I will never again entrust my person or property to those crazy animalculae imported over the mountains or lakes.[21]

The Sucker, Puke, and Hoosier Tame Cat refer respectively to notes of banks in Illinois, Missouri, and Indiana. Sucker was a nickname applied throughout the West to a native of Illinois, Puke to a native of Missouri and Hoosier, the most common of the three, being the nickname given to natives of Indiana. The "old domestic species of Buckeye or Corncracker" refer respectively to notes of banks in Ohio and Kentucky, which names are still applied to natives of those states.[22]

Benton's Bullets—Benton's Mint-drops

Hon. Thomas H. Benton, an American statesman of the Jacksonian epoch, was United States Senator from Missouri from 1820 to 1850. He was a "hard money" advocate and the foregoing reference to "Benton bullets" ties in rather closely to a reference at a later date to "Benton's Mint-drops." Benton's interest in hard money is well illustrated in the following extract from one of his biographies:

> So persistently did he urge . . . measures for supplying hard money to the country that for a time, his opponents called him "Gold Humbug," but this opprobrium gave way to the nickname of "Old Bullion," while the gold coins which began in a few years "to shine through the interstices of the long silken purse and to be locked up safely in the farmer's trusty oaken chest" were dubbed "Benton's Mint-drops"; and more than one story has been told of his dogged and universal adherence to his principles on this subject and of repeated refusals by him to accept in change for gold what he called "a pestilential compound of lamp-black and rags, yclept governmental paper." [23]

[21] Fred D. Merritt, "The Early History of Banks in Iowa." *University of Iowa Bulletin*, No. 15 (June, 1900), p. 35.

[22] Bartlett, *op. cit.*, pp. 72, 147, 294, 501, and 677.

[23] William M. Meigs, *The Life of Thomas Hart Benton*, Philadelphia: 1904, pp. 262-263.

Referring to this same term another writer comments: "When the Hon. T. H. Benton, of Missouri, put his whole strength forward on the floor of Congress and through the press to introduce a gold currency, he accidentally called the latter mint-drops, with a slight attempt to pun. The word, however, became popular, and for many years gold coins were very largely known as Benton's mint-drops, . . . "[24] The "bullet" and the "mint-drop" were probably synonymous as a bullet has been defined as a nugget of gold, a writer in 1889 having stated, "In the clay he was . . . likely to strike 'bullets,' lumps . . . or pockets of pure gold." [25]

Senator Benton made some interesting observations in a speech in the United States Senate (January 13, 1842) on the Cabinet plan for a Federal Exchequer. Some of his remarks on this plan follow herewith:

> The report which accompanies this plan is profuse in its recommendations, and in protestations of its safety and excellence; all the phrases of the bank parlor are here rehearsed, and set out to the best advantage, to delight and captivate us. Safe and solid specie basis—sound and uniform currency—better than gold, convertible at the will of the holder—always good: such are the holyday phrases which accompany the plan, and recommend it to our favor. Why sir, does the writer of the report not know that this is the very jargon of banking? that it is the cant of Change Alley, Cheapside, Threadneedle, and Wall street? Does he not know that it is the slang upon which every Bank charter is obtained—that it is the old worn out, used up, dead and gone, slang upon which every red dog, wild cat, owl creek, coon box, and Cairo swindling shop which has disgraced our Country, obtained their charter? and that all these paid specie til they stopped? [26]

The reference to Change Alley was no doubt to a thoroughfare by that name in London which in the early part of the eighteenth

[24] M. Schele De Vere, *Americanisms, The English of the New World*, New York: 1872, p. 291.

[25] W. A. Craigie, *Dictionary of American Language on Historical Principles*, 1938, Vol. I, p. 349.

[26] *The Congressional Globe* (Appendix), January, 1842, p. 65.

century was the scene of wild gambling in stock of the South Sea Company.[27] The reference to Cheapside may have been to a busy port of call by that name on the Connecticut River near Greenfield, Massachusetts, for the many steamboats passing between Hartford, Connecticut, and Wells River, Vermont. Many a citizen invested his hard-earned money to build canals, boats and wharves. Cheapside had traders and merchants of all kinds. There were warehouses, packing houses, a tavern, hotel, bakery, stores and shops—all the elements of a prosperous business community. As late as 1846, Cheapside was doing nearly as much business as was done in Greenfield's Main Street. But like a "boom town" of the West, Cheapside's heyday was short lived. The little steamboats could not compete with the speedier transportation of the railroads. One boating company after another failed, and business gradually removed to Greenfield village. Today, Cheapside bears little trace of its thriving commerce of a century ago.[28] Another Cheapside derivation had its origin in English slang, as "He came at it by way of Cheapside," that is, little or nothing was given for it.[29] The origin of the references to owl creek, coon box, and Cairo are somewhat obscure although there was prior to 1845 a bank at Mt. Vernon, Ohio, known as Owl Creek Bank, whose notes were described in 1845 as having "no sale." [30]

Another Benton item having some bearing on this subject is a copper token about the same size as our U. S. large cent. On the obverse appears the date "1841" and a female head facing left, and not unlike that on the U. S. cent of the same period. On the reverse appears the date "1837," around the outside edge the words "Bentonian Currency," and in the center the words "Mint Drop."

[27] Eric Partridge, *A Dictionary of Slang and Unconventional English*, 2nd Ed., London: 1938, p. 10.

[28] Anniversary booklet (1822–1947), First National Bank & Trust Company of Greenfield (Massachusetts), 1947.

[29] Albert Barrere and Charles G. Leland, *A Dictionary of Slang, Jargon & Cant*, Edinburgh: 1889, Vol. I, p. 239.

[30] *Clark's New-England Bank Note List*, Boston, July, 1845.

Certain other names for paper currency are found in these comments in the St. Louis *Daily Morning Herald* of February 18, 1853: "All the 'individual issues,' 'wild-cat rags,' 'red dogs,' 'plank road,' 'Illinois River,' and all other fraudulent and swindling shinplaster notes should be driven from the city." [31] The "plank road" reference may have pertained to notes of the Oswego & Indiana Plank Road Company and the Covington & Danville Plank Road Company, while the "Illinois River" reference was probably directed to the Illinois River Bank, at Peru City, Illinois. The names of these three organizations are found listed among a great many others in an 1858 bank note reporter under a heading entitled, "List of Broken, Closed, Failed, Fraudulent and Worthless Banks." [32]

A Western banker in a discussion as to the advisability of a uniform currency referred to "the shinplasters of Michigan, the wildcats of Georgia, of Canada and Pennsylvania, the red dogs of Indiana and Nebraska, the miserably engraved 'rags' of North Carolina and Kentucky, Missouri and Virginia, and the not-soon-to-be-forgotten 'stump-tail' of Illinois and Wisconsin. . . ." [33]

It will be noted that the Western banker ascribes certain types of notes to definite localities. He was no doubt quite familiar with the currency that circulated at that time. However, the wildcat banks were found in many other states in addition to Georgia and Pennsylvania. The red dog notes have previously been ascribed to New York rather than Indiana and Nebraska. While the derivation of "stump-tail" was not definitely established, it appears to have had a very close relationship to wildcat, and more specifically to the lynx, both of which are members of the family *Felidae*. Lynxes are found in the north temperate regions and the lynx while larger than the true wildcat is described as having among other characteristics a short stumpy tail. Under these circumstances it does not seem unreasonable to assume that the "stump-tail" notes and the

[31] Thornton, *op. cit.*, Vol. II, p. 946.

[32] *Peterson's Philadelphia Counterfeit Detector and Bank Note List*, October 1, 1858.

[33] *The Merchants' Magazine*, etc., New York: January, 1863, pp. 31-32.

"wildcat" notes are of kindred derivation. It does not appear illogical to include "bob tail" notes in the same category.

The *Chicago Tribune* in 1858, in referring to wildcat currency in the West, stated: "Minnesota is the paradise of the feline tribe. As in Michigan in earlier days, they flourish with a vigor of growth, and length of claw, and sharpness of voice, that are nowhere else attained." [34]

Another contemporary writer furnished this illustration of certain notes that were in circulation in the State bank note era:

> In the Western States they have had wild-cat and red-dog currency. To these are now added what they denote as "stump-tail currency." This term is used to signify the notes of those banks whose circulation has been based on bonds of the Southern States. Soon after the breaking out of the present rebellion, these bonds proved utterly worthless, and the banks which held them of a consequence caved in. Their issue became stump-tailed, that is, reduced to *nihil. Historical Magazine* [no date or location].[35]

A correspondent of the *New York Herald* in 1843 made this interesting observation with respect to certain paper currency circulating in Erie, Pennsylvania, at that time:

> We have a currency, but such a one as has never received the attention of any of our writers on money. It is called "crackee, jr.," in contradistinction from the relief notes of the Erie Bank, which were named "crackee," from a crackling sound produced with the paper when new. The new currency is issued in notes of six cents and upwards, and a considerable amount is in circulation, as I should judge by the way it is poked at every body who comes to market.[36]

Sherman's Money Drawer

The average handler of money today makes no distinction be-

[34] *Van Court's Counterfeit Detector and Bank Note List*, Philadelphia: April, 1858.

[35] *The Bankers' Magazine*, etc., New York: August, 1862, p. 164.

[36] *New York Herald*, June 25, 1843.

tween a Federal Reserve Note, a United States Note, or a Silver Certificate, and all notes of the same denomination are usually kept in the same compartment. The money handler in the State bank note era had to contend with a much different situation, which has been aptly described, by Hoyt Sherman, an Iowa banker in the 1850's, as follows:

To illustrate how the bank note deposits were assorted and treated by the bankers at that interesting period, I copy literally the labels on the several compartments in an old currency tray, in which the notes were assorted as they came in, and from which the checks were paid. These labels were: Eastern Penn., N. Y. and New England, in one compartment; Ohio, Indiana and Missouri, in another; then Va., Md. and Ky.; in another Ill. and Wis., and lastly, Western Mixed.

The first named notes were choice par funds, rating next to gold, and they were shipped to New York for exchange purposes. The next two (O., Ind., Mo., Va., Md. and Ky.) were "bankable funds," so-called, and graded as among the safest of bank notes. "Illinois and Wisconsin" took in the few legitimate free banks in those states, located principally in Chicago and Milwaukee; but the last label was more comprehensive than all the others put together. It included "rag tag and bob-tail," everything not comprehended under the other labels but resembling a bank note. "Western Mixed" was the dignified and formal name for it. Its pet names were "stump-tail," "red-horse," "wild-cat," "brindle-pup," and many others of like endearing character. The vigilant banker watched that pile of currency closer than the others. Its increase in quantity caused much anxious concern—and its decrease corresponding elation. As the close of the business day approached, if the supply was large, he prayed inwardly for checks to come in for payment; and if he could close up with that part of his tray empty, his sleep that night would be calm and peaceful. That kind of money reversed the usual order of things in the mind of a banker—a large balance, instead of being a source of satisfaction, was a very disagreeable menace.[37]

[37] Hoyt Sherman, "Early Banking in Iowa," *Annals of Iowa*, 3d Series, Des Moines: April, 1901, Vol. V, No. 1, p. 7.

Some New Jersey Wildcats

Wildcat banking was by no means confined to the West. There were several localities in New Jersey where wildcat banks were established, the principal places having been Tom's River and Cape May. In 1851, two such banks in the first named community and one in a near-by town were the subject of the following account:

There is a small locality in New Jersey, under the name of Tom's River, within about a day's journey from New York [seventy miles by road] which has been selected as the nominal place of issue of two Wall Street banks, in addition to one in the immediate neighborhood,—at the Bergen Iron Works [now Lakewood]. From this circumstance, the place derives some interest to us of New York, and it seems desirable to make known that the town or village contains four stores, one public house, and *two banks*, besides the one in the neighborhood. The landlord of the public house is the president of one of the banks,—the Union Bank, Ocean County,—and the keeper of the dry-goods store, which, like all small country stores, is an *omnium gatherum*, having for sale almost every description of articles, is the president of the other,—the Delaware and Hudson Bank, Ocean County. This out-of-the-way place presents several difficulties in the way of the redemption of the bills.

The bills are mostly issued in Wall Street, and sold largely to brokers at a discount, to put them in circulation. Leaving the city at an early hour in the morning, and taking the train by the Amboy Railroad, the locality cannot be reached before six o'clock in the evening,—after banking hours. To present them for payment, it is necessary to remain a day there, as the train passes before banking business commences, and a third day must pass before New York can be again reached.

By the banking law of New Jersey, banks are entitled to three days' grace in redeeming their notes, after presentation; which enables the officers to send to New York for specie, if any large amount of bills is presented for payment. In this manner is working the trade in a depreciated currency, which is on the increase, and which it behooves the State of New Jersey to remedy.

The bank neighboring those at Tom's River is the Ocean Bank, at

Bergen Iron Works. The bills issued are a *fac-simile* of the issues of the bank of the same name in this city, the names of the officers excepted. This bank has been generally supposed to be located at Bergen [now a part of Jersey City] in that part of New Jersey neighboring New York, but this is not so.

The trade driven in these bills is all in small notes, and the only effectual remedy seems to be not to permit issues of bills under ten dollars, which our abundant supply of gold enables us to do with ease. A large profit is derived by a few owners or banks out of the New York public, for the circulation is confined to New York. The community wants no such circulation as this, and the sooner it gets rid of it the better. The issues are based on deposits of good stocks, so that, as long as the securities are of value, the bills will be of value, minus ⅝ per cent, which is the discount they bear in the market.[38]

The Union Bank at Tom's River had an authorized capital stock of 20,000 shares of a par value of $25 each, of which 19,993 shares were subscribed for by one Benjamin Snyder of Bergen Iron Works. The Ocean Bank at Bergen Iron Works had the same authorized capital stock of which 19,993 shares were subscribed for by one John L. Snyder of Bergen Iron Works. In the case of the Delaware and Hudson Bank at Tom's River, referred to in the foregoing article, it had an authorized capital stock of $500,000 divided into 5,000 shares of a par value of $100 each, of which 3,940 shares were subscribed for by one James E. Kelley who was a broker in 1849-1850 and located at 52 Wall Street, New York City. No one of these three banks had an existence of more than three or four years.

Wildcat banking as such came to an end in 1866, when the Federal tax of ten per centum on the amount of State bank notes paid out by any bank became effective. That tax forced those previously unrestrained banks as well as reputable banks to provide for the redemption of their outstanding circulation, and as a result of that prohibitive tax most of the State banks then operating converted into national banks or went into voluntary liquidation.

[38] *The Bankers' Magazine*, etc., New York: August, 1851, pp. 159-160.

V

THE REPORTERS AND THEIR PUBLISHERS

THE publishers of these periodicals had a more or less important place in the bank history of this country for the period in which they operated, and it appears appropriate to set forth in considerable detail information concerning them and their publications.

In the following pages, beginning with New York City and following with other cities in alphabetical sequence, will be found the names of all bank note reporters that have come to the writer's attention, together with other information of more or less importance bearing on the history of these reporters and their publishers.

JOHN THOMPSON

A publisher of a bank note reporter whose fame in his day was no doubt greater than that of any other publisher of these interesting periodicals was John Thompson, a farm boy and a son and grandson of Revolutionary soldiers. While not the pioneer in this field, he was without question the most prominent. He was born on the family farm near Peru, about five miles north of Pittsfield, Massachusetts, on November 27, 1802, and was raised to the old New England maxim that the only road to prosperity was through hard work, plenty of it, honest trading, and thrift. John did his share of farm work in the summer and went to school in the winter. He finished his education at the age of nineteen, moved to Albany for a short time and while still in his twenties established himself in Poughkeepsie, New York.[1] He taught at a private school for a time in Poughkeepsie and in 1828 advertised as a dealer in lottery tickets, having obtained the agency there for the Yates and McIntyre lotteries. Dealers of this sort occupied much the same position in the

[1] *American Banker*, Centennial Edition, June 15, 1936, Section Three, p. 3.

community that the leading brokers do today, and the transition from the lottery business to certain banking activities was not unnatural, for all lottery men advertised to deal in uncurrent bank notes and became expert in discounts and in detecting counterfeits.[2] While Thompson's transition to the banking business did not occur until several years later, he did have the urge to move into a larger field.

It was in the year 1832 that John Thompson decided to transfer his activities to the metropolis of America. That year was a rather significant one in American banking history. Andrew Jackson had been re-elected by a large majority to the presidency of the United States over Henry Clay, his chief opponent, their political battle having raged over the question of rechartering the second Bank of the United States. Thompson's leanings toward financial affairs naturally led him to Wall Street, repeatedly the scene of incidents of peculiar historical significance. It was the seat of fashion and fine homes in its earlier years, as well as of the State government at one time, and also for a while of Congress. In Federal Hall at the northeast corner of Wall and Broad Streets, George Washington on April 30, 1789, took the oath of office as the first president of the United States. It was directly opposite Federal Hall that Thompson established his first place of business in New York City. The address, 12 Wall Street, then on the south side of the street just east of Broad Street, was approximately at the east end of the plot now occupied by J. P. Morgan & Co., Incorporated, and now known as 23 Wall Street.[3]

A brief description of his first place of business in New York City and of downtown New York at that time is found in these, his own words:

> It was in 1832 that I opened my broker's office in Wall Street. The place was small and unpretentious, and would serve only as an ante-

[2] Edmund Platt, *The Eagle's History of Poughkeepsie*, 1905. p. 107.

[3] Street numbers were changed about 1845.

room or cloakroom for some of the large and elegant offices of the latter-day financial kings of the famous thoroughfare. Adjoining it was the office of the *Courier and Inquirer*, then the leading newspaper of New York. The Battery and Bowling Green were then the fashionable neighborhoods. At that time the financial and commercial portion of the city, was entirely south of the City Hall and almost entirely east of Broadway. Broad and Nassau Streets were badly paved and were not occupied either by brokers or bankers, but Wall Street then, as now, was the money center of the city and of the country.[4]

The foregoing statement was said to have been from "his reminiscences, which are soon to be published. . . ." Unfortunately his reminiscences do not appear to have been published.

When Thompson established his business in New York City, eighteen commercial banks were in operation, ten of which were located on Wall Street within a stone's throw of his office. The Mechanics' Bank of the City of New York was at No. 16 (now 35); The Phoenix Bank of New York operated at No. 24 (now 41); directly opposite his office at No. 13 (now 32) National Bank of the City of New York was located; about next door to that bank at No. 15½, a branch of the Bank of the United States was in operation; at No. 17 (now 34) Union Bank of the City of New York had its office; at No. 23 (now 40) was and is now the location of the Bank of the Manhattan Company; at No. 25 (now 42) The Merchants' Bank in the City of New York carried on its business; on the northwest corner of Wall and William Streets The Bank of America operated; the northeast corner of the same streets was the location of the Bank of New York (now Bank of New York and Fifth Avenue Bank); and a few doors to the east was located City Bank of New York, now The National City Bank of New York, whose head office is now directly opposite its location in 1832.

Thompson, as a dealer and broker in uncurrent bank notes, was not very popular with the banks. The main source of profit to the

[4] *The Bankers' Magazine*, etc., New York: June, 1891, p. 989.

banks was circulation, and the more notes a bank kept out and in circulation, the greater was the bank's profit. Many of them were reluctant to redeem their notes in specie (gold or silver), when it could be avoided. Thompson, in buying up uncurrent notes, naturally paid for them in specie and in order to obtain more specie, to continue in business, his representatives would present such notes to the issuing banks for redemption. He had messengers in his employ who went out into the country for that purpose. In at least one instance he resorted to litigation to force a bank to redeem its own notes in specie. The following is a report of one such experience.

John Thompson *vs.* The Union Bank

Thompson had a 500 dollar note of the Union Bank of the City of New York, located directly opposite his office. A boy in Thompson's employ on October 14, 1835, at about 10:30 A.M., presented this note to the teller for redemption in specie. He was told by the teller that the porter was then out, and that he could not be paid until the porter returned. In those days the porter was an important individual in the bank as most of the bank's specie was under his control. It was the porter's duty to estimate the bank's daily demands for specie and keep the teller supplied. In this instance the porter returned to the bank after the boy had waited about half an hour, and when the boy asked him for specie, he (the porter) announced that he had to go out again and would return soon. The boy then returned to Thompson's office. Shortly thereafter Thompson went over to the bank himself and made some angry observations on the note not having been paid. Thompson then placed the note in the hands of Mr. Crooke, a notary, who went to the bank about noon and demanded specie for the note. The teller took the note and placed it under a saucer, and told Mr. Crooke that the porter was weighing specie and that the note would be paid before two o'clock. Mr. Crooke then asked the teller if he declined paying the note, to which the teller replied, "I do not decline it, but decline having any

further conversation with you." Mr. Crooke then took the note away and protested it for non-payment.

Thompson subsequently brought an action against the Union Bank and a representative of the bank testified at the trial that provision was made every morning for specie payments during the day, and that the usual amount of specie had been brought up that morning, but that part of it was exhausted before Thompson sent for payment of his note. There was further testimony to the effect that Thompson's boy had been paid a note for 100 dollars, prior to going with the note of 500 dollars. It also appeared that Thompson was in the habit of sending to the bank for specie, and that special care was taken by the bank to have it ready to meet his demands. This was not the situation in this instance. Evidence was adduced to show that Thompson was hostile to the bank, and had endeavored to harass and annoy it, and it appeared that there had been an unfriendly feeling between the parties before the transaction occurred which caused this suit.

The court subsequently charged the jury that this was an action against the Union Bank for non-payment of one of their notes. The notes were in the common form, by which the bank promised to pay the sum mentioned in it on demand, and the first question was, What is the obligation which such a note imposes on the bank? and the second question was, Had the bank refused to pay the note in such a way to render them responsible? That Mr. Thompson being the *bearer* of the note was entitled to be paid, there could be no doubt, as such were the precise words of the contract. The question was then, whether the words in the note bore any precise import differing from the common acceptation in which the words were understood; or whether the words "on demand" mean a different period of time, when used in relation to one individual holding the notes of another. The jury rendered a verdict in Thompson's favor for 500 dollars, with interest and costs.[5]

[5] *Niles*, April 16, 1836.

Thompson as a Publisher

Little is known of Thompson's first ten years in New York City. He did however establish himself as an exchange broker and built up a good reputation as a dealer in uncurrent bank notes. During this decade he was located at no less than three different places on Wall Street and when he branched out as a publisher his address was 52 Wall Street, which at that time was on the north side of the street about midway between William and Pearl Streets.

Early in 1842 when there were only two other bank note reporters of any importance published in New York City, John Thompson entered that field. One of the then publishers was Archibald McIntyre who had previously been a member of the firm that Thompson represented some fifteen years prior thereto as their agent in the sale of lottery tickets in Poughkeepsie. The first announcement of the publication of Thompson's reporter appeared in the *New-York American* for December 31, 1841. It read as follows:

Prospectus
of a New Bank Note Reporter,
To be issued on Tuesday, Jan. 4, 1842.

From the frequent complaints of want of confidence in the existing publications, the subscriber is induced to offer to the public a new Weekly Paper, under the title of THOMPSON'S BANK NOTE REPORTER, in pamphlet form, containing sixteen pages.

This paper will give a more perfect report of Banks, Bank Notes, Broken Banks, Counterfeit Notes, and Uncurrent Money, than any other paper now published. It will also contain full and accurate tables of gold and silver coin, stocks, &c. &c.

The rates of Uncurrent Money, and Bills of Broken Banks, will be quoted with the greatest accuracy, the market value in Wall street, at the time, being always the standard.

Fraudulent and unsafe Banks will be pointed out, and the public put on their guard, where failures may be expected, regardless alike of the favor or ill-will of the great financiers.

The Reporter will be issued regularly on Saturday morning, but when anything transpires rendering it necessary to inform our correspondents and subscribers, without delay, an extra will be issued and forwarded by the first mail, so they can have all the benefits of an attentive correspondent without the expense of letter postage.

The first page each week will be devoted to such remarks as will best serve the interest of that class who are constantly receiving promiscuous Bank Notes.

The Typographical department will be conducted without reference to expense, and no pains spared to render this Reporter as perfect as possible.

TERMS

Mail subscribers, payable in all cases in advance,	$3 00 per annum
Four subscribers clubbing together	10 00

Postmasters or others sending $12 for four subscribers will be put upon the subscription list gratis.

Single copies at the office 6¼ cents, 12 copies 50 cts. Office 25 Wall St.

T. THOMPSON.

N.B.—A few advertisements will be admitted under certain restrictions.

The name "T. Thompson" appearing in the foregoing advertisement is definitely a misprint and should have been "J. Thompson," the style which he apparently preferred to use and did use throughout his business career. His entrance into the publishing field was favorably received by the press, as indicated by the following announcements that subsequently appeared:

Bank Note Reporter.—Mr. J. Thompson, Exchange Broker, 52 Wall Street, publishes a very valuable "Bank Reporter." It came out yesterday, and is decidedly in favor of Captain Tyler's plan of finance. We recommend this periodical to every person who wants an accurate guide to the value of all sorts of bank note currency.[6]

* * * * *

Thompson's Bank Note Table.—The number for this week of this very valuable publication, will be published this morning at No. 52

[6] *New York Herald*, February 19, 1842.

Wall Street. It contains a vast amount of information respecting broken banks' notes, Counterfeits, Exchanges, Specie &c., all compiled by Mr. Thompson, who is himself an active dealer in all these things.[7]

While the original advertisement refers to his reporter as a weekly, the issue of March 23, 1842, indicates that it was published on Wednesday and Saturday. It was then entitled *Thompson's Bank Note Reporter*. The cover page carries the following terms of subscription: Mail subscribers, payable in all cases in advance, Monthly, $1, per annum—Semi-monthly, $2, Weekly $3, Semi-Weekly, $5, Single copies 6¼ cts., loose or in wrappers ready to direct.—Four subscribers, clubbing together, for weekly, $10—Postmasters, or others, sending $12, for four subscribers, will be put upon the subscription list gratis—all letters to this office must be post-paid.

Thompson issued from time to time three other related publications (*see* pp. 142, 150, and 152) as supplements to his reporter. In one of these publications issued in 1848, an advertisement announces that the *Reporter* was then being issued at the following per annum rates: daily (except Sunday) at $12, weekly at $2, semi-monthly at $1, and monthly at 50¢. After having been a publisher for seven years, Thompson made this statement regarding his *Reporter:*

> This work grows out of a desire to be *useful*, and the determination that while we *do* issue a reporter, it shall be, not merely *a* bank note reporter, but *The Bank Note Reporter;* and hence anything pertaining to bank notes or other species of money which can be serviceable to our subscribers and the trading community, we are determined to place before them.[8]

Sometime prior to 1849, the title changed to *The Bank Note & Commercial Reporter,* and a copy dated January 23, 1851, shows that it was then published semi-weekly. That same issue announced that the information contained therein was corrected by J. Thomp-

[7] *New York Journal of Commerce*, February 19, 1842.

[8] *The Autographical Counterfeit Detector*, 1849.

son, Stock and Exchange Broker of 64 Wall Street, and that it was published by Wm. W. Lee of 12 Spruce Street. In the issue of April 15, 1852, a claimed circulation of 50,000 was announced which had increased to 66,000 by October 16 of the same year. Prior to this date the *Reporter* appeared as a pamphlet about 11 inches by 7½ inches. The October 16, 1852, issue was increased in size to about 11½ inches by 9 inches. The issue of January 1, 1853, indicates that the *Reporter* was then published not oftener than weekly and the issue of June 1 of the same year shows a change of title to *Thompson's Bank Note and Commercial Reporter*. At that same date a circulation of 75,000 was announced which had increased to 80,000 by August 15, 1853. By March 1, 1855, Thompson's reporter had achieved a circulation of 100,000 which was by far the largest circulation claimed by any periodical of this type up to that time.

Thompson appears to have enjoyed a good reputation in most of his dealings, as evidenced by the following comments of a contemporary bank note engraver:

> It has doubtless been observed that we have recognized and quoted as a standard work, the Bank Note and Commercial Reporter, edited by J. Thompson, Banker and Broker,—published by W. Lee. These gentlemen evidently take a lively interest in the dissemination of information, in regard to every thing connected with a sound and unadulterated currency. The main object of their journal is to describe Counterfeit Bank Bills, and to guard the public as far as possible against frauds of every kind in relation thereto.[9]

Thompson's reporter had a national reputation as a journal giving trustworthy information and several of his contemporaries confirm this statement. His bold denunciation of bad banking practices involved him in several lawsuits, one of which is referred to (in his reminiscences) in these words:

> About 1838 Moses Y. Beach, having owned the *Sun* for several

[9] W. L. Ormsby, *A Description of the Present System of Bank Note Engraving*, New York: 1852, p. 63.

years, was organizing wildcat banks in New Jersey, Washington, etc. I exposed his nefarious schemes in my *Bank Note Reporter*. To get square with me he attacked me in the *Sun* in an outrageous way, calling me all sorts of hard names. My lawyers told me that he was liable for heavy damages and advised me to enter suit. I did so, and employed "Prince" John Van Buren, the brilliant son of Martin Van Buren, to make the closing speech at the trial. When the case went to the jury they gave me all I asked—$10,000—without leaving their seats.[10]

Thompson was proud of his reputation and standing and frequently impressed upon his subscribers his honest methods and policies. In his issue of August 15, 1853, is found this maxim:

We have No Sympathies to Influence
No Favours to Ask—No Fears to Consult

In our editorial character the above is our motto, and as we put it in type we impress it deeper in our heart.

We reproduce this motto, at this time, because we see that several of the Western Bank Note Reporters are denounced and condemned for quoting and puffing Shinplasters. We are too old to be trapped by fog-financiers. 'Tis our delight to crush them—'tis our sport to agonize them—'tis our duty to exterminate them.

We see them on their winding way.

We discover them tampering with the engravers—puffing their swindles, in advertisements—occasionally buying up an editor, (no allusion to long John), and often fastening upon green publishers of Bank Note Lists. We have felt the slimy skin of a Shinplaster Banker grasping us by the hand, but we much prefer a libel suit (no allusion to Geo. Smith) to any such contact.

Panic in Wall Street

In 1857, a panic came to Wall Street and the nation, and brought about a number of bank failures. On August 25, 1857, the Ohio Life Insurance and Trust Company of Cincinnati failed. This company whose currency enjoyed a wide circulation was incorporated in

[10] *The Bankers' Magazine*, etc., New York: June, 1891, p. 989.

1834 and for many years operated an agency at 45 Wall Street in New York City. This failure apparently caught Thompson unprepared and the following day his suspension was announced. The *New York Tribune* for August 26, 1857, announced: "This suspension is much to be regretted, and will cause considerable inconvenience at the West. Mr. Thompson has been for years the largest purchaser of uncurrent bank notes, and has acted largely as agent for interior banks." [11] As a result of his failure Thompson promptly turned over the publication of his reporter to Platt Adams who had been associated with him for several years. He announced that he would continue his connection with the paper in the editorial department.

Thompson Under Criticism

An account of one instance when Thompson was severely criticized by a rival publisher was found in the September 15, 1857, issue of *Lord's Detector and Bank Note Vignette Describer*, edited by Thomas R. Lord and published in Cincinnati. This tirade took much the same pattern as that followed by Thompson himself and other publishers from time to time. The article entitled "Thompsonian Banks" speaks for itself and read in part as follows:

> Since the failure of John Thompson, the great New York propagandist of "wild-cat" money, these "lame ducks" have suddenly been thrown upon their own resources and bottoms for sustainment; and the consequences have been most disastrous both to the concerns themselves and those who were so unfortunate as to have any of this so-called money on hand. An immediate and simultaneous smashing up of these "Cats" was the result of Thompson's failure, showing most conclusively that all the vitality and life they possessed were derived simply from a quotation in the columns of the "Reporter." It is almost needless for us to inform our readers that Thompson was well paid by the owners of these "pets" for his kindness in taking them under his paternal care. Thompson's successor in the "Reporter" will, in all probability, attempt to throw himself into the saddle of his vanquished and "illustrious predecessors,"

[11] *American Banker*, June 15, 1936, Section Three, p. 35.

but, if we are not greatly mistaken, the people of the West have had enough of Eastern wild-cat money and bogus Counterfeit Detectors. In one point of view, at least, the failure of Thompson has done good, and that is, the whole of Eastern wild-cat bankers have now received a check on their nefarious designs that will "cripple them for life," but greatly redound to the benefit of community. His "Reporter" has now lost most of its subscribers through the last exposures of its proprietor, and with it has departed the power and prestige to do evil never-more.

Editor Lord then listed five banks situated in Rhode Island which he indicated have become "bereft of their paternal protector—'Thompson's Reporter.'" He then goes on to say: "It makes no difference in what 'Reporter' you may see them favorably quoted and 'puffed,' do not be rash and retire to bed with any of their notes in your pockets." Continuing, he said, "Some of them [the five Rhode Island Banks] have had our 'mark' upon them for months past; and unless they give us better proof of their solvency than a mere quotation in the Ghost of Platt Adams'—'Thompson's Reporter'—we shall continue to give them the BENEFIT of our suspicions and circulation." He refers further to this situation in the following manner: "Thompson's failure, it seems, has embarrassed other banks which had allied their fortunes with those of their god-father; but to what extent has not transpired. Take our advice, and have nothing to do with Eastern money at the present time, except that which is known to be good and well secured."

One thing that Editor Lord failed to mention in his comments was that Thompson's financial difficulties were mainly due to the suspension (only three weeks before) of the Ohio Life Insurance and Trust Company whose main office was domiciled in Cincinnati where Lord's reporter was published.

The issue of May 1, 1858, then entitled *Thompson's Bank Note and Commercial Reporter*, shows it to have been "Edited by J. Thompson, and Corrected by Thompson Brothers, No. 2 Wall Street." The firm of Thompson Brothers no doubt comprised his two

sons, Samuel Clark, then about twenty-four years old, and Frederick Ferris, about twenty-two years old.

Thompson's reporter continued to enjoy a good circulation and he no doubt re-established himself financially. His close familiarity with banks, and especially with the use and abuse of State bank notes, brought him to the conclusion that a national currency system was needed. In 1861, he urged upon President Lincoln and Secretary of the Treasury Chase the establishment of such a system.[12]

When the ten per cent tax on State bank notes became effective in 1866 in order to further the interests of national banks, the primary need for bank note reporters as such became unnecessary and Thompson's reporter became a bank directory in the modern sense. It has been in continuous existence to this day and now appears as the *American Banker*, the only daily banking newspaper.

Libel Action Against Thompson

Thompson, as previously stated, was frequently involved in litigation, due to the nature of his business. Few cases, however, were carried to the higher courts, and as a result, records thereof are not found in official reports. One reported case referred to a libel action against him by the Shoe and Leather Bank. In July, 1862, at the Special Term of the New York Supreme Court, Thompson demurred to the complaint. In the written opinion the Court among other things stated:

> The defendant is the publisher of Thompson's Bank Note and Commercial Reporter, a paper having a large circulation among the inhabitants of the city and state of New York and other cities and states of the United States. He is charged in the complaint with having published in this paper several items manifestly calculated to affect the plaintiffs' credit as a banking institution.[13]

[12] *American Banker*, June 15, 1936, Section Three, pp. 35-36.

[13] The Shoe and Leather Bank *agt.* John Thompson, 23 How. Pr. 253, 254.

The demurrer was overruled. In the General Term of the Supreme Court for the First District in February, 1865, however, there was argued an appeal from the order overruling the demurrer filed in 1861. In the opinion rendered the following statements were made:

The plaintiffs, a banking corporation formed under the laws of the State of New York, brought this action to recover damages for a publication made by the defendant in a paper called "Thompson's Bank Note and Commercial Reporter," which stated that there were 50's and 100's of notes of the bank said to be counterfeits, and as the signatures on the genuine notes of the bank are engraved, the officers were in doubt as to which were good.

The complaint after setting out the above matters and the circulation of the paper, averred that divers neighbors and citizens to whom the innocence of the plaintiff was unknown, have since the publication, refused to receive the notes of the plaintiffs, and have refused to have any dealings or business transactions with the plaintiffs in their business of banking as they formerly had, to the great damage of the plaintiff.

The complaint also contained similar allegations as to another publication by the defendant, that the bank would not pay drafts upon it, and that he saw no reason why the bank may not at any time be closed by an injunction, with similar averments as to damage.

The defendant is the publisher of Thompson's Bank Note and Commercial Reporter, a paper having a large circulation among the inhabitants of the city and State of New York, and other cities and States of the United States. He is charged in the complaint with having published in this paper several items manifestly calculated to affect the plaintiff's credit as a banking institution. Among other items of intelligence contained in it are the following: "We would observe to those interested, that we see no reason why the Shoe and Leather Bank may not at any time be closed up by an injunction." "After promising to quote the Merchants' Bank at Trenton, I was informed that legal proceedings against the Shoe and Leather Bank were already under advisement."[14]

[14] The Shoe and Leather Bank *agt.* John Thompson, 18 Abb. Pr. 413, 415.

The decision on this appeal was that the demurrer had been properly overruled. On December 13, 1865, there was filed in the Supreme Court a consent and order of discontinuance in which attorneys for the plaintiff and the defendant agreed that the action be discontinued without costs to either party. Apparently Frederick F. and Samuel C. Thompson, sons of John, were involved in a similar action as a consent and order of discontinuance on their behalf was also filed on the same day.

The Thompsons As National Bankers

Shortly after the passage of The National Currency Act in 1863, The First National Bank of the City of New York (Charter No. 29) came into existence. While the name of John Thompson does not appear as one of the organizers, his two sons were original subscribers for a very substantial amount of the stock, and Samuel was its president for several years. Platt Adams, the publisher of Thompson's reporter for several years, and Charles Blondell, the publisher in 1867-1868, were also among the original subscribers to stock.

The National Currency Bank of New York was established in May, 1864, mainly as an agency for the redemption of national bank notes. While the name of John Thompson does not appear as one of the organizers, his two sons and his son-in-law, Francis G. Adams, were original subscribers for 97 per cent of the stock and Frederick F. Thompson was its president for several years.

In 1876, the Thompsons, having previously disposed of their interests in The First National Bank of the City of New York, decided to liquidate The National Currency Bank of New York, it not having been a profitable organization. In reporting this fact, a contemporary writer among other comments made the terse statement, "*Sic transit gloria*—Thompson No. 2." This bit of sarcasm on the part of that writer was no doubt an inference that the "glory" of the Thompsons in the banking business was about to pass away forever, they having disposed of their interests in The First National

Bank and being about to place The National Currency Bank in liquidation. This, however, was not the case; the *glory* of the Thompsons *did not pass.* In September, 1877, John Thompson then seventy-five years old, his son Samuel, his son-in-law Francis G. Adams, Lewis E. Ranson, a drug importer in New York City, and Isaac W. White, a dry goods merchant of Poughkeepsie, became the sole original shareholders and the first board of directors of The Chase National Bank of the City of New York. Samuel C. Thompson was that bank's first president and served in that capacity until his death in 1884, at which time his father, then about eighty-one years old, succeeded him. John Thompson served as president about two years and returned to the vice presidency when Henry W. Cannon became president.

John Thompson died on April 19, 1891, at the age of eighty-eight, after a varied and interesting career, his life having spanned a most important period in American history. He was an outstanding personality in his field and without doubt the most conservative and most prominent of all of the publishers of bank note reporters. Hoyt Sherman, a contemporary of John Thompson and previously referred to as a prominent banker in Iowa, cited Thompson's reporter as "the standard authority." While John Thompson was at times subjected to a certain amount of criticism, as were practically all such publishers, there were more favorable comments by contemporary writers with respect to him than of any other publisher. He was an American of the highest type and his full and abundant life was one of outstanding service to the banking fraternity.

Charles — McIntyre — Leonori — Taylor

Early in 1840, Edmund Charles and Archibald McIntyre, under the firm name of Charles, McIntyre & Co., began the weekly publication of *New-York Telegraph, M'Intyre's Gazette and General Advertiser.* This was a four page edition about the size of our present day tabloid newspapers. It appears to have been the first of a series

of publications of this type which continued for about twenty years under the aegis of several more or less connected proprietorships. In the issue of May 6, 1840, this statement is found regarding this reporter: "It has extensive circulation throughout the United States and Canada." The October 15, 1840, issue shows that the title had been changed to *New-York Telegraph, McIntyre's Bank Note List and Prices Current*. The publishers were at that time exchange and commission brokers with offices at 208 Broadway, New York City.

McIntyre, the more prominent member of this firm, was for several years prior to entering the publication field a member of the firm of Yates and McIntyre who managed lotteries in the State of New York. John B. Yates of this firm was a resident of Chittenango, New York. Archibald McIntyre was born in Scotland and came to this country when about two years old with his parents who settled first in Haverstraw, New York, and moved later to Broadalbin, New York. He was in the New York State Legislature from 1799 to 1801, appointed Deputy Secretary of State of New York in October, 1801, and in March, 1806, he became State Comptroller of New York, in which position he served until February, 1821. In 1823, he served in the New York State Senate.[15]

The State Comptroller had supervision over lotteries, and it was no doubt due to this circumstance that McIntyre later became actively engaged in managing lotteries. His firm managed the New York Literature Lottery, a portion of the proceeds of which was granted to Union College of Schenectady, as a result of which their firm was involved in extended litigation.

After the *New-York Telegraph, McIntyre's Bank Note List and Prices Current* had been in existence about two years, an announcement was made that "Chas. McIntyre & Co., 208 Broadway, have just issued the first number of a Bank Note List which will con-

15 A sermon by William B. Sprague, D.D., Minister of the Second Presbyterian Congregation, Albany, New York, Sunday, May 9, 1858, on occasion of the death of Hon. Archibald McIntyre.

tinue weekly."[16] Later that same year there came into existence *The New York Bank Note List, Counterfeit Detector, Wholesale Prices Current, and General Banking Statistic,* with Edmund Charles & Son as publishers, "successors to Charles, McIntyre & Co." The February 15, 1843, issue of this publication is a small pamphlet of thirty-two pages, containing the information usually found in periodicals of this type. It was published semi-monthly at two dollars per annum, from their office at 12 (now 23) Wall Street. It was at this same address that John Thompson, the prominent publisher of a bank note reporter, established himself in 1832. This publication continued for several years and in 1847 it was known as *Edmund Charles & Son's New York Bank Note List, Counterfeit Detector, Wholesale Prices Current and Weekly Journal of Financial News.* The issue of March 20, 1847, was in pamphlet form, of sixteen pages, and then published weekly at two dollars per annum from 37 Wall Street.

Competition between publishers of bank note reporters was quite keen and they did not hesitate to print critical comments of their competitors, some of which bordered on libelous statements. The following interesting reference to Charles and McIntyre was found in a contemporary reporter:

Charles & Son! alias *McIntire & Co.*

Since our last publication we have received many letters from different parts of the Union, which come from parties who have been victimized, or rather swindled by the individuals whose names are at the head of this article. We are apprised of what we before knew—that they are at the head of an enormous lottery, or rather gambling business, and the system they have adopted heretofore to make their schemes known is, to send them far and near under the title of "New York Commercial Circular," and the name of "Charles, McIntire & Co."[17]

[16] *New York Express*, February 17, 1842.

[17] *Mearson's United States Bank Note Reporter*, June 5, 1847.

About December, 1846, *Taylor's United States Money Reporter and Gold and Silver Coin Examiner* began its existence. Its sponsor, S. Taylor, conducted a specie and exchange office at 90 Broadway in March, 1847, and a few months later operated as S. Taylor & Co., at Wall and Broad Streets. In December of the same year George DeMott was the publisher at the foregoing address. In 1849, C. S. Sloane, an exchange broker at 23 Wall Street, was found to be the publisher of this reporter.

About 1850, the two aforementioned reporters appear to have been succeeded by *Charles & Leonori's New York Bank Note List, Counterfeit Detector, Wholesale Prices Current, and Commercial Journal.* The August 23, 1851, issue of this journal is a small pamphlet of twenty-four pages and it was published every Saturday morning at two dollars per annum. The firm at that time consisted of Edmund Charles and Lewis J. Leonori, and they were located at 35 Wall Street. About 1852, Charles appears to have retired from the firm and this publication continued until late in 1856 as *Leonori's New York Bank Note Reporter, Counterfeit Detector & Wholesale Prices Current.* At that time it claimed a circulation of 45,000 copies.

Late in 1856 or early in 1857, a "new" reporter made its appearance. Its masthead, format and title was identical with that of the aforementioned except that the name "Leonori" had been omitted. The publisher, H. S. Taylor, was a printer located at 61 Beekman Street. His name is listed in *Trow's New York Directory* for May 1, 1859, as the publisher of a Bank & Commercial Reporter at 208 Broadway. He is not listed after that date. This publication appears to have been the last of a continuous succession of more or less closely related publications of this type over a period of about twenty years.

Mahlon Day

The pioneer in this field of periodicals appears quite definitely to have been Mahlon Day, a printer, bookseller, and publisher of

children's books whose address at different times is given as 372, 374, and 376 Pearl Street in New York City. Day was born August 27, 1790, at Morristown, New Jersey, and was established in the printing business in New York City as early as 1815.[18]

On the first page of his September 6, 1837, reporter, which was known at that time as *Day's New York Bank Note List, Counterfeit Detecter & Price Current,* the following statement appears: "Established in 1819, Being the oldest paper of the kind." There is little question as to the correctness of the statement that his detector was *the oldest paper of the kind.* It is, however, quite uncertain that he began the publication of a bank note reporter, as such, as early as 1819. On February 21, 1815, Mahlon Day, in association with one Charles Turner, began the publication of a semi-weekly known as *New-York Shipping and Commercial List.* This paper contained, among other information, prices of stocks, prices current, notices of ship arrivals, importations, and rates of insurance. The issue of July 18, 1817, contains a table entitled "Bank Note Exchange." This table includes a list of banks whose notes were, at that time, received at par in New York City, together with a list of banks whose notes were not received on deposit by banks in New York City. It also included a list of banks located outside New York City, together with rates of discount at which their bank notes would be purchased. In subsequent issues at certain intervals bank note tables continued to be published.

In the issue of this publication for September 10, 1819, an announcement was made that Mahlon Day was withdrawing from the firm of Day and Turner and that he would continue the printing and stationery business on his own account. The announcement also stated that C. Turner and Company would continue publication of the bank note table in the *New-York Shipping and Commercial List.*

[18] Harry B. Weiss, "Mahlon Day," *Bulletin of The New York Public Library,* XLV (December, 1941), p. 1007.

Among the many publications of Day was a miniature almanac which he issued annually for many years. The earliest almanac found was that of 1823 under the title *Day's New-York Miniature Almanac*. In addition to the usual information found in most almanacs, it contains one page of very brief information pertaining to discount rates on bank notes and two pages of brief information regarding counterfeit and spurious notes. It *was* a miniature almanac, being but 3½ by 2 inches in size, and when the size of the page is visualized, one can well understand that the information contained on one page would necessarily be very brief. His almanacs for the years 1824 and 1825 contain information regarding bank notes similar to that found in the 1823 issue. His almanacs, however, for the years 1826 and 1827 have one page devoted to the discount rate on bank notes and no information regarding counterfeit notes. In the issue of 1828, the same size as his almanac for 1823, the information regarding bank notes and counterfeits was omitted. His almanacs for the years 1829, 1830 and 1831 carry a short notice to the effect that Day is the publisher of "the bank note list and counterfeit detecter." The fact that information regarding counterfeits was omitted from the 1826 almanac might lead to the inference that information of this sort was brought to the attention of the public by Day in some other manner. The 1848 almanac is numbered 30, which would indicate that the annual series may have started in 1819.[19] This may have some connection with Day's statement that his "detecter" was established in 1819. Further light as to the date his reporter first appeared may be gathered from the following notice:

Published this day, the *New York Bank Note List and Counterfeit Detecter*, shewing the value of Bank Notes in New York and a complete list of counterfeit bills in circulation throughout the United States —for sale at the bookstore of

MAHLON DAY,
376 Pearl Street.

[19] **Harry B. Weiss, *op. cit.*, p. 1012.**

N.B.—Persons residing out of the city, can have the Detecter furnished them for one year, by forwarding two dollars in advance.[20]

The earliest issue discovered is dated August 16, 1830, at which time it was known as *Day's New-York Bank Note List, Counterfeit Detecter and Price Current.* Upon the title-page the following statement is found: "Entered according to an Act of Congress the 30th day of October, 1826, by Mahlon Day, of the State of New York." It will be noted that this date precedes by only two months the date of the aforementioned advertisement.

It seems appropriate to present a rather detailed description of the contents of Day's detector for August 16, 1830, it being the earliest issue found of any periodical of this type. It is a folio of four pages about 20 by 13 inches in size, of attractive appearance and typography. The first page consists of five columns of the usual newspaper size and includes the names of approximately 500 banks in the various States of the Union at that time, together with a quotation in most cases of the discount rate at which notes of those banks could be disposed of in New York City. This information was furnished by John T. Smith & Co., exchange brokers at 25 (now 42) Wall Street, which firm continued for many years to furnish Day with similar quotations. There is a short table of exchange for buying and selling bills of exchange above and below par. There is also a list of about 50 banks and insurance companies in New York City "exhibiting the duration of their Charters, Capitals, par amount of Shares, times of paying Dividends, Discount Days, Current Price of Stock, &c." The second and third pages are devoted to "A List of Counterfeit Bills, of Altered Notes and those with Spurious Signers, throughout the U. States." The last page includes late information of counterfeits, a rather complete list of New York wholesale prices current, a list of incorporated banks in New York State outside of New York City, a list of "broken" banks, rates of postage, list of counterfeit coins, a table of distances between sev-

[20] *New-York Advertiser*, December 29, 1826.

eral different places on the Erie and Champlain canals, a schedule of arrival and departure of mails, together with advertisements of several books offered for sale by the publisher at his "New Juvenile Book Store, No. 376 Pearl-Street."

According to the New York directories up to 1844, Day continued to publish his bank note detector at 374 Pearl Street. The 1845-1846 and 1846-1847 directories indicate that for those periods it was published by Baker, Crane and Day, booksellers at the same address. With respect to this new sponsorship the following comment was found:

> This old, respectable publication has appeared to us, entirely renovated, with many important improvements, suggested by the enterprise, and intelligence of its new proprietors, and becoming necessary from its increasing usefulness and influence.[21]

Directories for 1847 to 1850 indicate that this reporter for that period was published by Stephen M. Crane at the same address. The New York directory for 1850-1851 shows William E. Crane at the same address (374 Pearl Street) as the then publisher. After 1851 and until 1853, a publication known as *Foster's* (late Day's) *New-York Counterfeit Recorder and Bank Note Table* with William E. Crane as editor was also published at the same address. The information therein was corrected by A. S. Foster, an exchange broker located at 234 Pearl Street. This recorder could be subscribed for on a monthly (50¢), semi-monthly ($1.00), weekly ($2.00), or a semi-weekly ($4.00) basis. Above the masthead of the February 17, 1851, issue of this publication appears the legend, "Established A.D. MDCCCXIX." This date has some bearing on the previous discussion of the year that Day began the publication of a bank note reporter. No further information was found as to any other successor to Day's detector, and as the last named publication is not listed in the 1853-1854 New York directory the conclusion may be reached that the history of this pioneer bank note re-

[21] *Willis & Co's Bank Note List and Counterfeit Detecter*, Boston: April, 1845.

porter appears to have covered a period of approximately thirty-four years.

Day's Exposé of Counterfeit Notes

Contemporaneous with the publication of his detector, Day undertook the circulation of a monthly periodical entitled *Day's Bank Note Table, and Expose of Counterfeit Notes.* It was described by him as:

> Containing a full description of Counterfeit, Spurious, and Altered Bank Notes, with the *Discount* on Bank Paper, shewing the value in New-York, of all the Monied Institutions in the United States, and the Canadas.

The only copy of this publication known to exist is dated June 15, 1830, and consists of 16 pages of two columns each, about 12½ by 8½ inches in size. The information therein was "Carefully Corrected by John T. Smith, Broker, 55 Wall-Street." No references whatsoever were found elsewhere to this publication and its period of existence was not ascertained.

Mahlon Day, a member of the Society of Friends, was the only one of five of the earlier and more prominent publishers of bank note reporters who was not at some time in his career engaged in the sale of lottery tickets. A sad and tragic end, at the age of sixty-four, brought to a close the full and successful life of this printer, publisher, and bookseller. He was returning from Great Britain with his wife and one of his daughters on the steamship *Arctic*, which, when seven days out of Liverpool and near Cape Race, Newfoundland, at noon on September 27, 1854, collided in a dense fog with a bark (French steamer *Vesta*) under full sail. Both vessels were lost and Mahlon Day, his wife and daughter, and many others were reported among the missing.[22] Through the sinking of this ill-fated steamer, William Benedict Brown, a member of the banking firm of Brown Brothers and Company, in New York City, also lost his life.[23]

[22] Harry B. Weiss, *op. cit.*, p. 1012.

[23] John Crosby Brown, *A Hundred Years of Merchant Banking*, New York: 1909, p. 240.

John S. Dye

In 1850, John S. Dye appears to have sponsored the publication in Cincinnati of *Dye's Counterfeit Detector and Universal Bank Note Gazetteer.* It was a small pamphlet about 8½ by 5½ inches in size. One issue dated 1850 (no month) was said to contain "correct rules by which spurious notes may be detected at a glance, also a list of all the fraudulent and broken banks and altered notes; and a list of all the solvent banks, with rates of discount." Another edition of this same periodical bears a Philadelphia imprint, under the same date, and was published in that city by Joseph Arnold. Their contents were by no means as complete as those found in other bank note reporters of that period. Dye in later years was said to be ". . . a recognized authority on the paper and precious currencies of the world. . . ." [24] In 1852, the title appears to have been changed to *Dye's Bank Mirror and Illustrated Counterfeit Detector.*[25]

Sometime within the next two years Dye moved to New York City and *Dye's Bank Mirror,* then published at 172 Broadway (cor. Maiden Lane), was described in this manner: "The Mirror is semimonthly and contains a description of all new Counterfeits, Banks, &c., and is embellished with engraved descriptions of every dangerous Counterfeit, forming altogether the cheapest means of ascertaining all news connected with Banks, &c., in the country." [26]

The following advertisement gave a detailed account of one of Dye's publications, and while it makes no mention of the title, it was without much doubt a description of his *Bank Mirror:*

The Most Useful, Most Perfect, Most Concise

Published weekly. $1.00 per annum.

Greatest Discovery of the Present Century for Detecting Counterfeit Bank Notes.

24 *Dye's Coin Encyclopaedia*, Philadelphia: 1883.

25 W. L. Ormsby, *A Description of the Present System of Bank Note Engraving*, New York: 1852, p. 41.

26 *Dye's Bank Note Plate Delineator*, New York: 1855.

Describing every genuine bill in existence, and exhibiting at a glance every counterfeit in circulation!

Arranged so admirably, that reference is easy, and detection instantaneous.

No index to examine! No pages to hunt up! But so simplified and arranged that the Merchant Banker and Business Man can see all at a glance.

It has taken years to make perfect this Great Discovery. The urgent need for such a work has long been felt by Commercial men. It has been published to supply the call for such a preventive, and needs but to be known to be universally patronized. It does more than has ever been attempted by man. It describes every Bank Note in three different languages, English, French and German.

The paper will be about 28 by 24 inches, and will contain the most perfect bank note list published, together with the rate of discount. Also a list of all the private bankers in America.[27]

Some years later the title of Dye's detector was changed to *Dye's Government Counterfeit Detector* and the office of publication was moved to Philadelphia. In 1879, he was located at 1338 Chestnut Street, "Opposite the United States Mint." At that time he styled himself as a "Treasury Expert." The later named publication continued for many years after the end of the State bank note era.

John S. Dye was also the publisher of *Dye's Wall Street Broker,* which appeared as early as 1847, and he also issued a publication entitled *Bank Bulletin,* a daily which began its existence about 1855.[28]

Frederich Gerhard

From about 1856 to 1867, one Frederich Gerhard published the *German Bank Note Reporter* in New York City. In the earlier years it was published semi-monthly, and during the last five or six years of its existence it was published weekly. Gerhard was located at several downtown addresses in the following chronological order:

[27] *The Falls City Register* (Paterson, New Jersey), March 11, 1857.

[28] J. H. French, *Gazetteer of the State of New York*, Syracuse: 1860, pp. 443-444.

133, 58, and 81 Nassau Street, 197 William Street, and 15 Dey Street.

Notwithstanding the fact that this reporter was published over a period of more than ten years, with total individual issues in excess of 350, no copies were discovered.

GWYNNE & DAY — H. J. MESSENGER

About 1854, John A. Gwynne and Clarence S. Day established a banking and brokerage business in New York City under the firm name of Gwynne & Day. In the early part of 1858, they appear to have sponsored the monthly publication of *The Bank Note Register and Detector of Counterfeits.* This was a small pamphlet with subscription rates at fifty cents per annum to monthly subscribers and $2.50 per annum to weekly subscribers. About two years later the title was changed to *Metropolitan Bank Note Reporter* and some years later to *Metropolitan National Bank Note Reporter*. It appears to have continued under the direction of Messrs. Gwynne & Day until about 1865 when H. J. Messenger, a banker at 139 Broadway, became the publisher.

The issue of February 17, 1866 (Vol. 8, No. 43, Whole Number 407) is a small pamphlet of forty pages and circulated then at $3.50 per annum to weekly subscribers. In this issue is found the following statement: "The quotations in the body of the Reporter for New York State, New England, and New Jersey, are furnished by the Metropolitan Bank, and the rates at which that institution credits such funds to account of its regular dealers."

Messenger was quite active as an up-State (New York) private banker and operated as such at various times at Canandaigua, Canton, Cortland, Geneva, Herkimer, and Marathon. This periodical appears to have been published until about 1868, at which time Messenger was reported as having been "unable to meet payments." [29]

[29] *The Bankers' Magazine*, etc., New York: June, 1868, p. 987.

The Hodges

John Tyler Hodges and Daniel Milton Hodges, brothers, and Edward Milton Hodges, a son of Daniel, were prominent publishers of a bank note reporter from about 1856 to 1866. About 1855, John was engaged as a banker at Broadway, corner of Canal Street, and Daniel as a broker at 114 Grand Street.[30] Entirely reliable information is not available for the first few years of their venture in the publishing field. The volume numbers on their reporter in later years indicate that the first issue appeared about 1856. About 1857, a weekly entitled *Journal of Finance & Bank Reporter* was published by Monroe & Hodges.[31] That firm consisted of James Monroe and J. Tyler Hodges and was located at 271 Broadway. In 1859, J. T. Hodges was found to be the proprietor of the *Journal of Finance & Bank Reporter* and J. Monroe as the proprietor of the *Journal of Finance* at 4 Wall Street.[32]

The issue of January 1, 1861, appeared as *Hodges' Journal of Finance and Bank Note Reporter* with Daniel M. Hodges as editor and proprietor, with a claimed circulation of 103,000. Daniel died in January, 1862, at which time his son Edward, then about twenty-five years old, took over the publication which he continued until the latter part of 1865. The January 1, 1866, issue, then under the editorship of James N. Phelps, and with the title changed to *National Journal of Finance and Hodges' Bank Note Reporter*, carried a notice which read in part as follows:

> The radical change . . . and the general absorption of State by National Banks, having in a great measure curtailed the field of operations for counterfeiters, as well as both the demand and necessity for a weekly counterfeit detector we have come to the conclusion . . . to discontinue for the present the weekly publication of the Bank Note Reporter . . . and to issue in its stead a first-class financial and commercial newspaper . . . The National Journal of Finance. . . .

30 *Trow's New York Directory*, 1854-1855.

31 *Wilson's* (New York) *Directory*, 1857-1858.

32 *Trow's New York Directory*, May 1, 1859.

The National Journal of Finance will be forwarded regularly to the weekly subscribers of the Reporter . . . "Hodges' Journal of Finance and Bank Note Reporter" will be issued hereafter on the first of every month; . . . .

This reporter was issued in good form and style and can be classed among the better publications of this type. The publishers were quite frank in expressing their opinion as to the condition of the banks and their January 1, 1861, issue contains a column headed "THROWN OUT!" followed by the statement "The notes of the following banks are thrown out by the brokers:—" There are then listed the names of thirty-seven banks located in twelve different States and Canada. This same issue contains a column headed "Our present list of Equivocal and Doubtful Banks, whose notes should be refused," which contains the names of thirty-seven banks in fifteen States, Canada, and the District of Columbia.

During the period in which their reporter was issued, the Hodges' from time to time also published *Hodges' New Bank Note Safe-Guard*, *Hodges' Genuine Notes of America*, and *Hodges' Coin Chart Manual*. In 1861, their yearly subscription rates for the reporter, including the Safe-Guard (with Monthly Supplements) and the Coin Chart Manual, were: weekly $4.00, semi-monthly $3.00 and monthly $2.50. Rates for the reporter for one year including *Hodges' Genuine Notes of America* and *Hodges' Coin Chart Manual* were: weekly $2.50, semi-monthly $1.50 and monthly $1.00. Hodges' reporter is not listed in *Trow's New York Directory* for 1866-1867, which would appear to indicate that publication ceased in 1866.

L. S. Lawrence & Co.

About 1858, L. S. Lawrence & Co., bankers and brokers at 164 Nassau Street, were proprietors of a publication known as *L. S. Lawrence & Cos.' Bank Note List*. Samuel French was the publisher. The March 3, 1858, issue was in pamphlet form and consisted of thirty-two pages. It was issued weekly in New York and a New

England Edition was issued semi-monthly in Boston. It does not appear to have existed more than two years.

George Mearson

About May, 1846, George Mearson of 48 Gold Street, New York City, began the publication of *Mearson's United States Bank Note Reporter.* It was a weekly in pamphlet form and sold for three cents a copy. In the June 5, 1847, issue (the only copy found), it claimed to have "a guaranteed circulation" of 8,000 copies weekly. Mearson operated a print shop where as he stated he could "undertake book work of every description and also stereotyping."

This reporter contains the usual list of banks together with the rate of discount on their notes and a description of outstanding counterfeits. Information therein was corrected weekly by A. Nicholas, an exchange broker located at 52 Wall Street. Nicholas, some years later, published a bank note reporter under his own name. Mearson's reporter does not appear to have continued publication after 1849.

L. Mendelson

About July, 1864, L. Mendelson of 76 Nassau Street, New York City, began the publication of the *National Bank Note Reporter.* This was a weekly in pamphlet form at $5 per annum to weekly subscribers, $3 to semi-monthly subscribers and $1.50 to monthly subscribers. It contained a list of the National banks, State banks, and "retired" banks. The issue of July 1, 1866, consisting of forty-eight pages, in addition to the foregoing information contained stock quotations, financial news and a few advertisements. In December of the same year the name appears as *The National Bank Note Reporter and Financial Gazette.* The 1869-1870 New York City Directory indicates that A. Cohn was the publisher at that time. In June, 1876, when this reporter was edited by D. F. June, it was merged with *Thompson's Bank Note Reporter.*[33]

[33] *The American Banker,* June 15, 1936, Section Three, p. 38.

E. Morrison and Company

The Exporter and Banking Circular, a large folio of four pages, began publication about December, 1848, under the proprietorship of E. Morrison at 29 Wall Street, New York City. He was probably a member of the firm of E. Morrison and Company who were the publishers for a while of Sylvester's reporter. This circular, published weekly, contained three pages with the usual information with respect to rates of discount and description of counterfeits, while the last page was devoted almost entirely to advertisements of several lottery schemes being conducted mainly in Delaware and Virginia. Morrison was a dealer in uncurrent bank notes and offered for sale the various lottery tickets advertised in his paper.

Only one copy of this circular was found and there is no indication that its existence was very extended. In 1858, Morrison conducted an exchange, banking, and collection office at 51 William Street.

Anastasius Nicholas — Nicholas, Bowen & Co.

Anastasius Nicholas, an exchange broker, located at various times at 52, 68, 70, 74, and 90 Wall Street, sponsored the publication of *Nicholas' New York and Chicago Bank Note Reporter,* a weekly at $2.50 per annum. The earliest number found is dated January 18, 1862, Volume 7, Whole Number 324, which appears to indicate that this periodical began its existence about October, 1855. The issue referred to, in pamphlet form, consists of thirty-two pages, with the information therein having been corrected by A. Nicholas & Co., 90 Wall Street. The 1866-1867 and 1867-1868 New York directories indicate that Nicholas, Bowen & Co. were the publishers at that time. *Trow's New York Directory* for 1857-1858 lists A. Nicholas of 70 Wall Street as the publisher of "Bank Note List and Insurance Reporter." That may have been an early title of this publication. While "Chicago" is incorporated in the title of this reporter, it does not appear to have been published in that city at any time.

Nicholas' reporter appears to have been published weekly for about twelve years, a total of more than six hundred individual issues. After an exhaustive search in libraries and historical societies throughout the country, only four issues of this reporter were found. One in 1862, referred to above, one in 1863, and two in 1864. This clearly illustrates the ephemeral nature of these publications.

Sylvester J. Sylvester

One of the more important bank note reporters in New York City and the second to be published regularly was that sponsored by Sylvester J. Sylvester who began business about 1825. One of his earliest activities, as was that of several other publishers of bank note reporters, was the operation of a lottery and exchange office at 130 Broadway, where he was located for more than twenty years. In an early newspaper advertisement his establishment and address was referred to as "The Mint, Sylvester's, 130 Broadway." At that time his principal activity was the sale of lottery tickets, and in this same advertisement the public was urged to "call at once at Sylvester's Mint and large riches will be bestowed upon you with a bounteous hand." The advertisement also indicated that he purchased notes of broken banks.[34]

S. J. Sylvester appears to have begun the publication of his reporter about April, 1830. The earliest issue found, dated December 2, 1830 (No. 34), is entitled merely *Sylvester's Reporter*. It was a folio in form and quarto in size and described itself as being a weekly report of lotteries, bank notes, broken banks, and stock. The subscription rate was $1.50 per annum. This same issue indicates further that "The Reporter will give a correct list of Yates & McIntyre's Lottery Schemes and the official drawings of lotteries; also the value of Uncurrent Bank Notes—Broken Bank Bills—Gold—Silver—Bills of Exchange, Stocks, Shares, etc., etc." The next issue discovered is dated February 3, 1831 (Vol. 1, 2d. Series, No. 4), upon

[34] *New York Gazette & General Advertiser*, December 27, 1826.

which the title appears as *Sylvester's Reporter and Counterfeit Detector*. This issue, somewhat larger in size than the first, was at that time published every Thursday evening. The issue of March 24, 1831, also a folio, is about the same size as our present day tabloid newspaper. The issue of June 22, 1831, entitled *Sylvester's Reporter, Counterfeit Detector and New York Price Current,* was then published every Wednesday evening. The title on the issue of October 3, 1832 (Vol. III, 3d Ser., No. 38), appears as *Sylvester's Reporter, Counterfeit Detector, New York Price Current and General Advertiser.*

This reporter had the unique distinction of having been printed during a part of its existence by the eminent American journalist and statesman, Horace Greeley. In January, 1833, when Greeley was but twenty-two years of age and only two years after he arrived in New York City, he formed a partnership with Francis V. Story, a fellow-workman. One of their earliest ventures was the printing of *The Morning Post* which lasted less than three weeks. Greeley in his autobiography stated that his friend Story was acquainted with S. J. Sylvester, then a leading broker and seller of lottery tickets, who issued a weekly "Bank-Note Reporter," largely devoted to the advertising of his own business, who offered their partnership the job of printing that paper.[35] Greeley did not state how long their firm continued to print this reporter.

Shortly after Messrs. Greeley & Story undertook the printing of this reporter it appears to have entered an era of prosperity, and the issue of August 29, 1833 (Vol. IV, No. 41), indicates that the subscription rates had been increased to $2.50 per annum. This prosperity no doubt continued and the issue of December 25, 1837 (Vol. IX, No. 5), under the same title was published every Monday afternoon at the subscription rate of $3.00 per annum.

About 1838, a rival reporter, under a similar title, made its appearance and Sylvester in his issue for October 1, 1838, caused the following notice to be inserted:

[35] Horace Greeley, *Recollections of a Busy Life*, New York: 1872, p. 91.

S. J. Sylvester's Reporter.—A paper having lately appeared in this city under the title of "Sylvester's New Reporter," I deem it advisable, in order to prevent my friends and the public from being deceived thereby, to state that the name of my paper remains unchanged, and I am still at 130 Broadway, where I have been for thirteen years past—and of course have not removed therefrom.

The issue of August 12, 1839 (Vol. X, No. 38), indicates that this reporter was still published every Monday afternoon on what he then described as "a large imperial sheet." The subscription rate in November, 1848, had been reduced to $2 per annum and the reporter, still a large folio, continued to be published every Monday afternoon. It was then described as "containing a full and accurate list of all counterfeits in circulation.—Broken Banks and all the Fraudulent Institutions—Bank Note Table; comprising all the solvent banks in the Union, with the value of their notes in this city."

The latest number found is dated September 24, 1849, at which time it was published by E. Morrison and Company who were then located at 47 Wall Street, which location had previously been that of S. J. Sylvester.

E. J. Sylvester & Co.

About 1838, E. J. Sylvester & Co., who operated a lottery and exchange office at 156 Broadway, began publishing *Sylvester's New Reporter, Counterfeit Detector, Bank Note Table and New York Prices Current.* This publication had no connection whatsoever with that sponsored by S. J. Sylvester who was located at 130 Broadway. The issue of February 5, 1840, was a sixteen page pamphlet while the issue of June 23, 1840, consisted of a large sheet folded so as to make four pages. Its period of existence covered about three years.

Boston

Notwithstanding the prominence of Boston in the early history of this country only two bank note reporters of real importance appear

to have been published in that city. There is evidence, however, that reporters published in other places circulated in Boston.

Clark

About January, 1838, *Clark's New-England Bank Note List and Counterfeit Bill Detector* made its appearance in Boston. In 1845, it was known as *Clark's New-England Bank Note List*. It was printed and published by J. N. Bang and corrected by J. W. Clark & Co., stock and exchange brokers of Boston. It was a monthly publication in pamphlet form and subscription rates were $1.50 per annum. Copies of this reporter were found bearing various dates from March, 1838, to November, 1846. No information was found that indicated when this reporter ceased publication.

Willis

October, 1843, is the month and year in which *Willis & Co.'s Bank Note List and Counterfeit Detecter* made its appearance in Boston. It was issued monthly in pamphlet form by Thomas Groom & Co., stationers, edited by Willis & Co., stock, exchange, and money brokers, and printed by Dickinson & Co. Subscription rates were $1.50 per annum.

The publishers announced in the issue of April, 1844, that:

> It will be their aim to give to the community, in a concise and tangible form, every information relative to the standing of the several Banking Institutions throughout the United States and the adjacent British Provinces; a description of their issue, rates of discount, and the names of their Presidents and Cashiers, enabling any one to detect at a glance the Counterfeit, Spurious, Mutilated or Altered Bank Note. Annexed to which will be a Table of the Value of Gold and Silver Coins; the Rates of Exchange and Discounts, with a complete list of the Market Value of Bank, Insurance, Government, State and other Stocks and such other information relative to Monetary affairs as shall be useful to every man of business.

In October, 1845, the publishers announced: "To those who will now commence with us, we inform them that we are just two years old; we started with an edition of 800, and now print 2000 copies monthly; . . . ." This reporter was published at least until September, 1854. Its discontinuance was due, no doubt, to financial difficulties of its publishers, as evidenced by the following notice: "In July 1854—Willis & Co., Bankers—Boston—were forced to suspend—due to the great pressure that prevailed at that time in the stock and monetary affairs of the country." [36]

Clapp, Fuller & Browne

The outside cover page only of *Clapp, Fuller & Browne's Bank Note Reporter and Counterfeit Detecter* for March, 1859, was found.[37] It was published monthly by Thomas Groom & Co., of Boston, who had been the publishers of Willis & Co.'s reporter. This cover page is of the same format as that of Willis & Co.'s detector, and there is every reason to believe that it was a continuation of that publication. No information was obtained as to its period of existence, although one copy dated December, 1861, is known to exist. The directories for the City of Boston from 1846 to 1866 do not list any of the detectors published in Boston, nor any other publications of this type, and definite dates as to when those reporters ceased publication were not established.

Lawrence

There was a New England Edition of *L. S. Lawrence & Co.'s Bank Note List*, which publication appears to have had a short career in New York as well as in Boston. In the New York Edition of that periodical for March, 1858, under the caption "Opinions of the Press," the following article is quoted from the *Boston Daily Traveller* (no date):

[36] *The Bankers' Magazine*, etc., New York: August, 1854, p. 154.

[37] *Landauer Trade Cards*, Vol. 2, The New-York Historical Society.

L. S. Lawrence & Co.'s New York and New England Bank Note List for January has just been issued by Mr. W. F. Davis, 25 State Street. Mr. Davis is well known as a most skilful detector of counterfeit or altered notes. An experience of many years, commenced in the foreign money department of the Suffolk Bank, and continued, of late years, in one of the largest banking and exchange offices in State Street, has given him such an expertness that it would be a marvellous thing for a spurious note, of any description, to pass beneath his lynx-eyed gaze without detection. Mr. Davis will be the New England editor and publisher of the Detector, which will contain a large amount of useful and valuable matter to banking institutions—and, in fact, to every merchant and trader, none of whom should be without a Detector on their counters. The Detector is issued Semi-monthly, at 8 cents a copy, or $1.50 per annum.

Bicknell's Boston Edition

In 1833, John J. Spear, a broker at 15 Exchange Street, Boston, published what might be termed a Boston edition of *Bicknell's* (Philadelphia) *Counterfeit Detector and Bank Note List.* The only copy found has on the outside cover page the year of publication, 1833, the title, name, and address of the publisher, together with the statement that it was "Published every six weeks, or eight numbers per annum." The inside cover page is the same as that of the edition published in Philadelphia. The issue found is dated May, 1833 (No. 2 of Volume I). From this it would appear that Spear in Boston obtained a supply of Bicknell's detector as printed in Philadelphia and merely added to it an outside cover page as a sort of "Boston Edition." No information was obtained as to the period of time covered by this edition.

Buffalo

Under date of November 18, 1858, the *Bank Note Register and Counterfeit Detector,* a weekly, appeared in Buffalo, New York. Edward L. Lee was publisher and John R. Lee, the editor. Edward L. Lee was a banker and broker doing business at 11 Exchange

Street, Buffalo, and John R. Lee was his cashier. This reporter was issued in pamphlet form and bears a striking resemblance to *The Bank Note Register and Detector of Counterfeits,* published by Gwynne & Day, Bankers, in New York City at the same time.

The following excerpt is taken from the prospectus which appeared in the first issue:

> We do not assume that our city has been, or is, suffering for the want of a work of the kind we have taken in hand, but we do claim that all the information required by our business community on the subject of Currency, Banking, &c., can be furnished at home; and the paper merchant, the printer, and others in our midst, become the recipients of the large patronage now bestowed on works of a similar character published elsewhere. Our claim will be to faithfully chronicle passing events coming within the scope of our paper; to speak of things as we find them without fear or favor, and, in all respects, to serve the interests of our patrons as we shall from time to time have opportunity.

This same issue also contains an announcement that the register is corrected in New York by E. Morrison, Esq., Banker; in Boston by Messrs. Clapp, Fuller & Browne, Bankers; in Cincinnati by Messrs. Geo. S. Wright & Co., Bankers; and in Chicago by F. Granger Adams, Esq., Banker. With the exception of Messrs. Geo. S. Wright & Co., the others named were also at various times publishers of periodicals of this type.

With the issue of January 13, 1859 (No. 9), the name was changed to *Lee's Bank Note Register and Counterfeit Detecter* under which title it continued until March 3, 1859 (No. 16). The issue of March 14, 1859 (No. 17) appears as *Bank Note Register and Counterfeit Detecter* under which title it continued at least until November 11, 1859 (No. 52). This register designated by the publisher as a "weekly" was dated anywhere from three to eleven days apart.

The fifty-two numbers of this register may be found in two volumes in the library of the Buffalo Historical Society. On the in-

side cover of one of the volumes appears the statement "From John R. Lee, Nov. 5, 1866." This was no doubt the editor's own personal file. It probably constitutes a complete file of this register, and appears to have been the only one that was ever published in Buffalo.

CHARLESTON

In 1854, *Monroe's Southern Banker* was published in Charleston, South Carolina. An account of its inception was found in the following editorial:

> We have received the first number of this most necessary counterfeit detector and Commercial Reporter. A work of this kind has been long needed at the South, and we are pleased to see that Mr. Monroe has at once placed it on an equality with any of the old Northern publications. Our space this week will not allow us to enter into the details of its merits, but we would advise every merchant, planter and mechanic in our District to take it at once. Published monthly at Charleston, by J. Monroe, price $2 per annum.[38]

No further information was found with respect to this publication, or its period of existence.

CHICAGO

The present site of Chicago, upon which Fort Dearborn was established in 1804, was on an important portage route, used by the French in the earlier days. When Cook County was organized in 1831, Chicago was a small village which incorporated as a city in 1837. Its first banking institution, as such, was a branch of the State Bank of Illinois (*Second*) which came into existence in December, 1835. The Bank of Illinois, the first bank to receive a charter in what is now the State of Illinois, was incorporated in 1816 and established business at Shawneetown on the Ohio River in the extreme southern part of the State.

[38] *Laurensville Herald* (Laurens, South Carolina), May 5, 1834.

Sheldon—Adams

About June, 1853, when there were then less than ten banks doing business in Chicago, the first bank note reporter in that locality appears to have made its debut. It was in pamphlet form and quite similar in appearance to many others that were in circulation in several other places at that time. It was then known as *Sheldon's North American Bank Note Detector and Commercial Reporter*, and was published semi-weekly, weekly, semi-monthly, and monthly at the respective rates of $4, $2, $1.50, and $1 per annum. It was described as containing a list of all the broken, counterfeit and uncurrent bank notes in North America; review of the commercial markets; wholesale prices current; financial review; statistics; rates of discount of uncurrent money; foreign exports and imports.

The issue of July 2, 1853, indicates that it was then being published by Sheldon & Company of 55 Clark Street, which name appears to have been the style adopted by Reuben Sheldon, then cashier of the State Bank at the same address. In the 1855-1856 Chicago directory, Reuben Sheldon is listed as an Exchange Broker. Just how long this publication appeared under that title is obscure. Sometime prior to October, 1859, however, the title of Sheldon's reporter was changed to *The Chicago Bank Note List* with F. Granger Adams as the publisher.[39] Adams, as previously stated, was a son-in-law of John Thompson of New York.

In 1861, Adams published a "Descriptive List of Genuine Bank Notes" which was furnished gratis to subscribers of *The Chicago Bank Note List*. In this descriptive list is found the following detailed description of the periodical that sponsored its publication:

> The "Chicago Bank Note List" is a western paper—gives a western value to western funds—and its editor confidently asserts is equal in every point to any paper of the kind, East or West. Business men of the West are invited to compare it with any Bank Note Detector published —if they find it what it claims to be, to subscribe.

[39] *Lee's Bank Note Register and Counterfeit Detecter* (Adv.), Buffalo: October 22, 1859.

In the Chicago Bank Note List will at all times be found a full list of all the solvent banks in the United States and Canadas—the rates at which the notes will be taken in Chicago—a full and complete Price Current, corrected with great care for each number, with a general summary of all such matters as bear on the money and stock market of the West.

Adams appears to have continued as publisher at least until July 15, 1862, according to the issue of that date. This issue, the only intervening one found subsequent to one in 1853, does not show a volume or issue number. The issue of this reporter for October 15, 1863, carries on the cover page the statement "Established 1853," which appears to substantiate the statement that *The Chicago Bank Note List* was a continuation of Sheldon's reporter. Notice was given that the information contained therein was corrected by the Traders' Bank and that communications should be addressed to S. K. Reed at 24 Clark Street. It would appear that F. Granger Adams, then interested in the Traders' Bank, had after several years turned over the publication of *The Chicago Bank Note List* to Silas K. Reed, a printer of Chicago.

The issue of June 1, 1863, shows on its cover page the volume and serial number, Vol. XI, No. 11. On the basis of a change of volume number annually, this reference appears to further substantiate that *The Chicago Bank Note List* was a continuation of Sheldon's reporter. The issue of November 16, 1863, is described as Vol. XI, No. 22, with S. K. Reed as publisher. The Chicago directories for 1863-1864 and 1864-1865 list *The Chicago Bank Note List* with S. K. Reed as publisher. It no doubt discontinued publication in 1865, and no periodicals of this type are found listed in *Halpin's Chicago Directory* for 1866.

Under the respective sponsorships of Reuben Sheldon, F. Granger Adams and Silas K. Reed, this reporter appears to have been published continuously for about twelve years from 1853 to 1865.

Poole

According to *D. B. Cooke & Co.'s Chicago Directory* for 1857-1858, Isaac A. Poole, a dealer in books and maps, was the publisher of *The North-Western Bank Note and Counterfeit Detector,* a semi-monthly. His address was 17 S. Clark Street and quotations were by Church & Co., of 48 S. La Salle Street.

Willard and Young

Edward K. Willard and Caryl Young, bankers of 2 S. Clark Street, according to *Cooke's Directory* for 1859-1860, were publishers of a bank note reporter. While they are listed in the 1857-1858 and 1861-1862 directories as bankers, there is no indication that they published a bank note reporter during those periods.

Tinkham

The Chicago directory for 1861-1862 lists Edward I. Tinkham, of the banking firm of E. I. Tinkham & Co., as the publisher of a bank note reporter. His firm in 1862-1863 was reported to have been "In liquidation," at which time he is listed as being cashier of the Traders' Bank.

Phillips

Sometime in 1859 or 1860, Bezaleel W. Phillips, a banker of 8 S. Clark Street, sponsored the publication, monthly and semi-monthly, of *Phillips' North Western Money Reporter and Insurance Journal.* According to *Cooke's Directory* for 1860-1861, Phillips' name appears to have been dropped from the title, and George W. Kendrick, a banker, formerly of Port Byron, New York, is listed as publisher. Alexander Mayer of 8 Clark Street is named as the editor.

The Chicago directories for 1861-1862 and 1862-1863 show B. W. Phillips as the publisher of the *North Western Money Reporter,* at which time it was issued weekly, semi-weekly and monthly. It is not listed in the directory for 1863-1864.

McElroy

About 1862 or 1863, Solon McElroy, a banker, who some two or three years earlier had been general agent for the British Commercial Life Insurance Company, began the publication semimonthly and monthly of *McElroy's Bank Note Reporter.*

The Chicago directory for 1864-1865 indicates that he continued its publication at least until that time. The directory for 1865-1866 shows him only as secretary of the Chicago Stock Exchange.

Cincinnati

Cincinnati, laid out in 1789, was one of the first settlements in the Northwest Territory. The opening of steam navigation on the Ohio River in 1816, followed in 1830 by the completion of the Miami Canal, connecting Lake Erie with the Ohio River, brought rapid development of river and canal traffic, making this city an important river port.

Goodman

It was not until about July, 1840, that the *Western Counterfeit Detector and Bank Note Table,* a monthly in pamphlet form, made its appearance in Cincinnati. It was published by Charles Goodman under the supervision of H. H. Goodman & Co., exchange brokers. Sometime prior to July, 1845, the title was changed to *Western Counterfeit Detector, Bank Note Table, and Cincinnati Wholesale Prices Current.* At that time it was published at the office of T. S. Goodman & Co., exchange brokers. Under the same sponsorship the issue of May, 1847, shows another change of title to Goodman's *Western Counterfeit Detector, Bank Note Table, Cincinnati Wholesale Prices Current.*

In 1853, W. McCammon, Jr., appears as the publisher and in 1855, Wm. H. Ongley is found acting in the same capacity. Goodman's detector is not listed in *Williams' Cincinnati Directory* for 1856, and we can probably assume that its publication was discon-

tinued sometime in 1855. In 1858, T. S. Goodman was appointed cashier of the Chillicothe branch of the State Bank of Ohio.[40]

T. W. Lord—Thos. R. Lord & Co.—Johnson Bros. & Co.—Bepler & Co.

About 1842, T. W. Lord appears to have sponsored the publication of a bank note reporter in Zanesville, Ohio. Confirmation of this statement is found in the January, 1848, issue (No. LXVII, Vol. VI) of the *Zanesville Counterfeit Detector, and Bank Note Reporter* with T. W. Lord as its editor and proprietor. This issue was in pamphlet form and while the date line carries no place of publication, two advertisements of Zanesville merchants appear on the first page.

Under date of June, 1849, issue No. LXXXIV (Vol. VII) of *Cincinnati Counterfeit Detector and Bank Note Reporter* was published under the sponsorship of T. W. Lord as editor and proprietor. This publication was also in pamphlet form, of good format and contained, in addition to the usual information found in such publications, sixteen pages of facsimiles of the various gold and silver coins most generally found in circulation. Contained therein is an announcement that it was "Printed on the Steam Press of Wright, Fisher & Co., Gazette Office, 112 Main Street, Cincinnati." The typography and format of the two aforementioned reporters clearly indicate that they were printed from the same style of type and probably in the same office. The claimed circulation of this reporter at that time was 5,000 and the information therein was corrected by M. A. Bradley & Co., owners of the Phoenix Bank, who offered to receive all notes as quoted. The volume and issue number seem to indicate quite clearly that this reporter was a successor to the *Zanesville Counterfeit Detector and Bank Note Reporter*, and the following account will tend to confirm that statement.

Under date of March, 1850, issue No. 93 (Vol. VIII) of *Bradley &*

[40] *The Bankers' Magazine*, etc., New York: June, 1858, p. 974.

Co's Cincinnati Counterfeit Detector and Bank Note Reporter was published with T. W. Lord as editor and proprietor. It claimed a circulation at that time of 8,000. In this number, the editor in commenting upon the success of this publication made this interesting statement: "Twenty months only have elapsed since the first number was published in this city, ..." Comparison of the issue and volume numbers of this reporter with those of the Zanesville reporter, previously mentioned, leaves little doubt that Lord was located in Zanesville prior to moving to Cincinnati.

This publication continued for several years. T. W. Lord & Co., exchange brokers, are listed as the publishers of a bank note reporter in the Cincinnati directories from 1853 to 1856, after which the name of T. R. Lord appears irregularly for several years. In 1854, it was known as *Lord's Detector and Bank Note Reporter*. The issue of September 15, 1857 (monthly Vol. 16–No. 183) (semimonthly Vol. 5–No. 107), is entitled *Lord's Detector and Bank Note Vignette Describer* and, while published by Thos. R. Lord & Co., of Cincinnati, the following places are indicated on the date line, "Cincinnati, New-York & St. Louis." An inside page carries this statement: "Established in 1842." This publication, while containing discount rates and descriptions of counterfeits, found in typical bank note reporters, also included descriptions of genuine vignettes which were a feature of the "descriptive lists." (*See* pp. 142-145.) Another feature is found in its method of listings. A small cut of a wildcat is shown opposite the statement "indicates a 'Wild-Cat' concern" (Plate XVIII). This same cut appears after the names of several organizations in the reporter to indicate that they are wildcat banks. Lord's detector is listed in all directories from 1859 to 1867. In 1857, Johnson Bros. & Co. took over its publication, and in the 1860's it was published by Bepler & Co.

In 1861 and for some years prior thereto, Bepler & Co. were the publishers of *Bepler's Bank Notes-Lists,* printed in German. This was at one time a forty page pamphlet, and the April 1, 1861, issue

carries in the date line "Cincinnati, St. Louis and Chicago." A publication known as *Lord's Detector* was published in St. Louis, and may have had some connection with this series of publications.

John S. Dye

As heretofore stated, John S. Dye of New York appears to have sponsored the publication of *Dye's Counterfeit Detector and Universal Bank Note Gazetteer* in Cincinnati about 1850. Dye published in Cincinnati in 1852 *Dye's Bank Mirror and Illustrated Counterfeit Detector*. No information was obtained as to the period of existence of these publications.

General Counterfeit Detector

In 1850, Richard Smith is found as the publisher of *General Counterfeit Detector,* a monthly.[41] No further information was obtained and no copies of this reporter were found.

Langdon, Hawes & Co.

From about 1856 to 1860, Langdon, Hawes & Co. were publishers of *Cincinnati Safety Fund Bank Note Reporter*. Nothing was found that connected this publication with any others in Cincinnati, nor was any further information discovered.

White's Reporter and Counterfeit Detector

About 1859-1861, The Union Bank Reporter Publishing Company located at Walnut and Fifth Streets, in Cincinnati, sponsored the publication of *White's Reporter and Counterfeit Detector,* a monthly. No further information was found with respect to this reporter.

Union Counterfeit Detector

The Cincinnati directory for 1862 and 1863 lists *Union Counterfeit Detector,* a monthly, as being published at that time. This pub-

[41] Williams' *Cincinnati Almanac, Business Guide and General Advertiser*, 1850.

lication may have been the successor to the aforementioned reporter.

Detroit

David Preston & Co.

About 1855, David Preston & Co., exchange brokers and bankers of Detroit, Michigan, began the publication of *Preston's Bank Note Reporter*. It continued for at least ten years and the only copy found (Vol. 8, No. 5) is dated March 1, 1864, at which time it was known as *Preston's Detroit and Chicago Bank Note Reporter.* It is about quarto in size and was published semi-monthly at that time. This reporter probably circulated in Chicago as well as Detroit, as David Preston was also a member of the firm of Preston, Willard & Kean, Bankers, at No. 1 Clark Street, Chicago.

Brown

Under date of January 1, 1859, J. H. Kaple & Co., bankers of Detroit, issued the first number of *Brown's Bank Note Reporter* with J. Brown as editor. It was a weekly, about quarto in size. It was probably short lived, as were many others, as its names does not appear in the Detroit directories after 1859. A complete weekly file from January 1, 1859, to July 1, 1859, inclusive (Nos. 1-25) was found. This probably constitutes the full period of existence of this reporter.

Montgomery

In 1855, Samuel Swan of Montgomery, Alabama, published *Swan's Bank Note List and Detector.* It was said at that time to have been issued monthly at two dollars per annum. A notice of this publication indicated that "There is a variety of useful information in the work, in addition to a copious list of new and old counterfeits." [42]

Swan was an energetic and ambitious business man in Mont-

[42] *The Bankers' Magazine*, etc., New York: December, 1855, p. 492.

gomery and about 1851 he published a lithograph by Sarony entitled "The Burning of the Capital December 14, 1849." He also printed and sold lottery tickets, and conducted several lotteries in behalf of projects in the State of Alabama.

In 1856, this reporter was said to have been published semimonthly, when it consisted of "some 40 quarto pages devoted to a list of all the banks in the United States, description of counterfeit bills, and a variety of other information of great value to merchants and bankers."[43] No copies of this reporter were discovered, nor was its period of existence ascertained.

Montreal

A bank note reporter was published in Montreal, Canada, in 1861, according to Kenny's *The American Newspaper Directory and Record of the Press*. No further information was found with respect to this reporter.

Philadelphia

Robert T. Bicknell — Imlay & Bicknell

In 1830, when there were approximately 330 banks operating in this country, Robert T. Bicknell, a lottery broker in Philadelphia, began the publication of a bank note reporter and counterfeit detector. He was the pioneer in this field in Philadelphia and was preceded only by Mahlon Day and S. J. Sylvester in New York. The first number, in folio form, dated July 31, 1830, appeared as *Bicknell's Counterfeit Detector, and Pennsylvania Reporter of Bank Notes, Broken Banks, Stocks, etc.* In this number the following reprint of his original prospectus is found:

> It is handsomely printed on a super-royal sheet, with good type, contains a vast quantity of reading matter, as well as a list of prices current, a bank note list, and all such information as is calculated to prove serviceable to the man of business, country merchant and storekeeper.

[43] *The Merchants' Magazine*, etc., New York: August, 1858, Vol. 35, p. 217.

It will be issued every two weeks, is published on Saturday, embraces the latest foreign and other intelligence up to that period, and will be sent by mails which leave the city on the day of publication. The terms of the *Counterfeit Detector* will be Two Dollars per annum, payable in advance.

For about six months this reporter was published semi-monthly and then became a weekly. Several title changes took place during its existence. In June, 1831, the title was changed to *Bicknell's Reporter, Counterfeit Detector, and Prices Current,* and in February, 1835, to *Bicknell's Reporter, Counterfeit Detector, and Philadelphia Prices Current*. The issue of July 19, 1836, appeared as *Bicknell's Counterfeit Detector, and Pennsylvania Reporter of Bank Notes,* and the title again changed the following week to *Bicknell's Reporter, Counterfeit Detector, and General Prices Current* under which it continued until June 30, 1857, when it ceased publication in large folio form.

In October, 1832, Bicknell announced that having had frequent applications made to him for his List of Counterfeits and Altered Notes, and Bank Note List, in pamphlet form, he had concluded for the convenience of his numerous friends and the public to issue an edition in that form. The pamphlet edition, a monthly, first appeared on October 1, 1832, as *Bicknell's Counterfeit Detector and Bank Note List.* It contained items regarding finance, banks and banking, the usual bank note list, list of counterfeit and altered notes, a few advertisements and a table headed "Bank Note Exchange," arranged by States with the rates of discount on State bank notes at Philadelphia, Pittsburgh, Baltimore, New York and Boston. The weekly newspaper edition was referred to as the "Reporter" and the monthly pamphlet edition as the "Detector." The first named did not carry at all times a description of counterfeit and altered notes. The following announcement in Bicknell's own words with respect to his pamphlet edition may be of interest:

On the first of October last [1832], the subscriber, publisher of the "Reporter, Counterfeit Detector and Prices Current," issued his Bank Note List, and List of Counterfeits and Altered Notes, in pamphlet form, thinking that in that form it would be more convenient for the use of those who refer to his lists as a guide as to the genuineness of a note or otherwise. The success of this publication has been beyond his most sanguine expectations. Up to this time [May 1833] he has printed the seventh edition, and has sold about Twenty-five Thousand copies. This unexpected success, together with the urgent solicitations of many friends and patrons, has induced him to make such arrangements as will enable him to issue "The Counterfeit Detector and Bank Note List," hereafter, in pamphlet form, eight times a year, or every six weeks, in a new and improved manner, and carefully corrected. The first regular number of this series was commenced on Friday, the first of March. Each number will contain a carefully corrected Bank Note List, giving the names and places of location of all the banks in the United States, together with the rates of discounts on the notes of each. Prices of Gold and Silver. Also a correct description of Counterfeit and Altered notes, which are now, or have been in circulation, on each of the various Banking Institutions.

The pamphlet will be published on a royal sheet, and will contain twenty-four pages. Terms only $1 per annum, payable in all cases in advance.[44]

Bicknell, in an attempt to obtain some free advertising, made this statement following the above announcement: "The publisher of any newspaper in the United States who will give the above advertisement one or two insertions, and notice the 'Detector' editorially, will receive the Pamphlet regularly for two years." (*See* p. 114 for reference to a Boston Edition.)

The pamphlet form changed later to a monthly edition until sometime prior to March 1, 1845, when it was issued semi-monthly. After the pamphlet edition began, the table of counterfeit and altered notes did not appear in every edition of the weekly publica-

[44] *Bicknell's Counterfeit Detector and Bank Note List*, Philadelphia, Vol. I, No. 2, (May, 1833).

tion. In 1850, the weekly publication (in newspaper form) is accredited with a circulation of 4,000 and the semi-monthly publication (in pamphlet form) with a circulation of 5,000.

The weekly reporter of May 14, 1839, was published with all columns bordered with a heavy black stripe and the leading editorial announced the death of Robert Thaxter Bicknell on May 7, 1839—thirty-three years old. Bicknell in his will bequeathed his establishment to Matthew T. Miller, a near relative, who for many years had been associated with the concern as cashier. Miller announced that the Reporter would be published as heretofore. Matthew T. Miller continued the publication of the weekly reporter and the semi-monthly detector until June 30, 1857, when he announced that his time "being fully occupied in other and more profitable business, he has determined to relinquish the publication of the weekly Reporter." He also announced that the "Detector (pamphlet edition) will continue to be issued on the first and sixteenth of each month, and for the future will be published by Mr. Charles P. Bicknell," the only surviving son of the original proprietor.

Only a few issues of this publication were found subsequent to 1857, and it has not been possible to record accurately its history after that date. The Philadelphia city directory for 1859, however, lists "Imlay's & Bicknell's Bank Note Reporter." It appears that Mr. Charles G. Imlay, president of the Washington Insurance Company and cashier of the State Saving Fund, joined Mr. Charles P. Bicknell as a partner in the continuance of this venture. In 1862, it was published by Charles C. Rhodes for the proprietors, and the bank note list was corrected by Work, McCouch & Co. It is found listed under the foregoing title in the Philadelphia city directories from 1859 to 1866 inclusive. While no definite information was found as to when it ceased publication, it probably occurred in 1866, when the imposition of a ten per cent tax on State bank notes made the need of such publications unnecessary. The Bicknell publications covered a span of at least thirty-six years, being the long-

est period covered by any such publication during the State bank note era.

While, as previously stated, relatively few copies of these publications survive today, this is not the case with respect to Bicknell's weekly reporter in newspaper form. With the exception of a few scattered numbers in the first two years of its existence, a complete file of this reporter from 1830 to 1857 may be found in the Mercantile Library of Philadelphia.[45] They no doubt contain considerable source material on banks and banking during that interesting period.

Montgomery's

In 1841, the statement was made, "No less than three counterfeit detectors were published in this city [Philadelphia]—Bicknell's, Montgomery's and Van Court's."[46] One Robert Montgomery was an exchange broker in 1840, and in A. M'Elroy's *Philadelphia City Directory* for 1842 he is listed as the publisher of *U. S. Reporter and Counterfeit Detector*. No copies or any other reference to this reporter were found.

Peterson's

In 1858, a reporter under the sponsorship of T. B. Peterson & Brothers, 306 Chestnut Street, Philadelphia, made its appearance. Its inception was announced in the following newspaper editorial under a caption entitled "Varieties":

> A New Counterfeit Detector—There are a great many counterfeit detectors published, mostly emanating from the city of New York. T. B. Peterson announces that he intends to publish one for Philadelphia, which will be as full of its information respecting counterfeits, broken banks and rates of discount on bank notes, as it is possible to make it. It will be placed under careful supervision. Drexel & Co., of this city, will make the corrections. Not being intended to subserve the purpose

[45] *See* appendix for source of copies of the pamphlet edition.

[46] William M. Gouge, *The Journal of Banking*, Philadelphia: July 21, 1841, Vol. I, No. 2.

of any particular banking house, as the New York detectors mostly are, it will be a useful and reliable publication for the business community. Its title will be Peterson's Philadelphia Counterfeit Detector and Bank Note List, and it will appear about the beginning of the new year.[47]

Two days later the following advertisement appeared under a caption entitled "New Publications":

COUNTERFEIT DETECTOR—NEW AND RELIABLE ONE

Peterson's Philadelphia Counterfeit Detector and Bank Note List.

To be published monthly, in a large page, 48 pages in each number on the first of each month, the first number being dated January 1st, 1858, and to be ready on Wednesday, December 23rd.

Drexel & Co., Bankers to Correct it.

The corrections in the Bank Note List as relates to the discount on Notes; Lists of new Counterfeits, etc. will be made by the well known Banking House of Drexel & Co., 34 South Third Street. And they will purchase all Bank Bills at the quotations made therein. This Detector will be found to be

RELIABLE AND TRUE

The publisher has for a long time seen the necessity and want of an entirely CORRECT, INDEPENDENT AND RELIABLE COUNTERFEIT DETECTOR AND BANK NOTE LIST, to be entirely uncontrolled by anyone to suit their own ends and purposes, and is confident that from the means and sources of information which the Editors of this Detector will have at their command, that it will be found to be the most RELIABLE Detector ever published in this country. . . .[48]

The Peterson Magazine, devoted to art, fashions and light literature, was published at the same address and its publisher, C. J. Peterson, in the issue of November, 1858 (p. 371), states ". . . that Peterson Magazine has no connection with T. B. Peterson & Broth-

[47] *The Public Ledger* (Philadelphia), December 5, 1857.
[48] *Ibid.*, December 7, 1857.

ers." This notice appears to raise some question as to the reputation and standing of this reporter and may have been a sequence of the following account that appeared in *The Bank Note Register and Counterfeit Detecter,* Buffalo, for June 2, 1859, as reprinted from *The Bank Mirror* (no location nor date):

Imlay & Bicknell's Reporter of Philadelphia, has the following palpable hit at a contemporary who publishes a *Detecter* as an adjunct to the advertisements of "yellow-kivered literature," and who has discovered more "*new*" (?) counterfeits the last year than would fill his book twice over—In every issue heralding forth, with startling capitals, a prodigious number, the greatest part of which are much older than the work itself, and *new* to nobody but its novel-writing editor. Imlay says:

A Novel Detecter.—It is said that a Detecter in this city [Philadelphia] announces more new novels than new counterfeits. Out of the 66 announced as new in its April issue, we observe some 40 almost grey with age.

Some few months later another announcement, referring to the February, 1860, number of this reporter, is couched in the following more favorable tone:

One great feature of Peterson's Detector is a page of information on finance, locally and generally, written expressly for this work by one of the least visionary writers in this country.[49]

McElroy's Philadelphia City Directory lists Peterson's detector annually from 1860 to 1867. Its name is not found in the 1867-1868 directory.

Storm & Morgan

Storm & Morgan, Exchange Brokers, located at 51 South 3rd Street, Philadelphia, in 1842, were the publishers about that time of *Bank Note Rates of Exchange and Counterfeit Detector.* This was another short-lived reporter as evidenced by the following an-

[49] *The Daily Guardian* (Paterson, New Jersey), February 13, 1860.

nouncement in *Van Court's Counterfeit Detector and Bank Note List* for June, 1843:

Bank Note Rates of Exchange
and
Counterfeit Detector
1843

The list of subscribers of the above named publication has been transferred to J. Van Court, Esq. Our subscribers will accordingly be hereafter served with "Van Court's Counterfeit Detector."

(Signed) STORM & MORGAN

Phila. May 27, 1843

No further information was obtained with respect to this detector and no copies were found.

VAN COURT'S

From 1830 until just prior to his death in May, 1839, Robert T. Bicknell had the field to himself in Philadelphia in so far as bank note reporters were concerned. Under date of February 14, 1839, a new monthly reporter appeared under the title *Philadelphia Reporter, Counterfeit Detector, Philadelphia Prices Current, and General Advertiser.* The publisher was John Libby, the printer, J. Van Court, and the subscription rate one dollar per annum.

A detailed statement of the contents and the aims of the publisher as it appeared in the first issue follows:

The Philadelphia Reporter, the first number of which is now presented to the public, has been undertaken from a conviction that a work of the kind—so cheap as to place it in the reach of every person—was needed. The country is literally flooded with spurious paper, that is, counterfeit notes—and the unsuspecting and those who are less able to sustain loss, are the persons who generally suffer most. The amount lost annually by the farmer, the mechanic, and persons in a small way of business, is enormous—the merchants and all through whose hands

large amounts of paper money pass, come in for a share—while innkeepers and traders are peculiarly liable to imposition. The best way to guard against impositions in the receipt of bank notes, is correct information, so as to enable a person to decide with accuracy between the genuine and the counterfeit. So far as this very desirable end may be accomplished, through the agency of the press, it will be attempted; and for this purpose we shall publish from time to time, a full, complete and correct description of all known counterfeit notes in circulation, as in the present number: and also keep the public advised of all new counterfeits, alterations and frauds. The reader will also find a description of Frauds—a list of Closed and Broken Banks. The value in the city of Philadelphia, of the notes of the different Banks throughout the Union—the Prices of Stocks, etc.—the whole revised and corrected for each publication by a gentleman who has for years past been connected with the money and stock markets, and whose opportunities of obtaining correct and early information on all subjects connected with his profession, is equal to that of any other.

The Prices Current, will receive particular attention. The prices of the principal articles will be corrected by gentlemen extensively engaged in mercantile pursuits. Every effort will be made to render the table as correct as the fluctuating state of trade will render possible.

The remainder of the paper will be occupied by the News of the day —Miscellaneous reading—Statistical information—intelligence respecting the money market, agriculture, commerce, trade, the mechanic arts, &c. We have thus briefly given an outline of the paper. We make no promises further than that we bring what industry and talent we possess to the work. The present number we submit as a sample of its general execution—and we hope so to conduct it as to render it an acceptable visitor in the counting house of the merchant—the store of the trader—the shop of the mechanic—the dwelling of the farmer—in all places of business, and among all classes who may be benefitted by it.

Messrs. Prouty, Libby and Prouty appeared as the publishers of the third number. The October, 1839 (No. 9), issue shows a change of title to *Philadelphia Reporter, Counterfeit Detector and Prices Current* at which time the publishers stated that "at the suggestion

of our many friends we have changed the form from quarto to octavo." In December of the first year, the publishers transferred their interests to John Van Court, who preferred to be known as "J. Van Court." He was a printer in Philadelphia for about thirty-five years.

In September, 1840, the title of this reporter was changed to *Philadelphia Counterfeit Detector and Bank Note List.* The final change in title took place with the issue of December, 1841, when it took the name of its publisher and printer and was thereafter known as *Van Court's Counterfeit Detector and Bank Note List.*

In the issue of March 7, 1842, the following notice is found:

> At the suggestion of a number of our friends and subscribers, we have determined to issue a small sheet, (large enough, however, to answer our purpose) every week, except the week in which our regular monthly is issued. 2 pp. In order to keep the public apprised of the various changes which are taking place almost daily in the value of our paper money.
>
> Price 6¼ cts., every Friday morning.

In issue No. 3 of this sheet, notice was given that the price had been reduced to three cents, and on August 19, 1842, Van Court announced that in the present stagnation of business this publication was not needed every week and that in the future it would be issued about the middle of the month. This "small sheet" was continued at least until June 15, 1844 (No. 32).

Van Court was jealous of the good reputation he had built up over a number of years and in 1857, the day after a large advertisement announcing the publication of a new reporter appeared in a local newspaper, he caused the following notice (in part), with respect to his reporter, to be published:

> This Detector (established 1839) is as correct, reliable, well arranged, and complete, as any work of the kind can be made. This assertion is made understandingly, after an experience of nearly twenty

years. And when any men or set of men, attempt to make the public believe, through flashy advertisements and paid editorials, that they are about to issue a better and more reliable work of the kind than was ever before published, that same public will begin to suspect, as well it may, that there is in the whole thing a strong *squinting* of HUMBUG.

Van Court's Counterfeit Detector is fully equal (we do not say superior) to any other work of the kind, especially in the arrangement, the States being placed in alphabetical order, and having a marginal alphabetical Index, thus making it very convenient for reference. The most untiring efforts are made to furnish a correct and competent Detector, and Note List, with the rates of discount, descriptions of counterfeits, prices of stocks, list of broken banks, etc.[50]

In many instances it has not been possible to establish the exact date when the publication of a particular reporter was discontinued. That is not the case with Van Court's. The following footnote, in ink, is found at the bottom of the first page of the issue of December, 1858 (Vol. XX, No. 12, Whole No. 239):

The last number issued by J. V. C. Sold to Imlay
& Bicknell who united it with their Reporter.
(Signed) J. V. C.

The foregoing statement, apparently in the handwriting of the publisher, brought to a close the twenty year span of this reporter, which appears to have enjoyed a good reputation during its entire existence.

PITTSBURGH

Pittsburgh in western Pennsylvania, where the Monongahela River and the Allegheny River meet to continue on as the Ohio River, was an important river point in the early years of the nineteenth century. The first bank note reporter, according to the following advertisement, came into existence there in 1838:

E. Sibbet & Co., Exchange Brokers, Pittsburgh, propose to issue a monthly publication under the title,—

[50] *The Public Ledger* (Philadelphia), December 8, 1857.

Sibbet's Western Review Counterfeit
List and Monthly Report of the Currency and Markets

The present unsettled state of the currency, and the great and increasing importance of the cities and towns of the west, both combine to render the proposed publication one of almost indispensable necessity.

The work will be printed on a small and elegant type.—Each number will contain twenty-four super-royal octavo pages.

The first number will be issued on the first of June, [1838], from which time it will continue to issue regularly on the first of every month.[51]

The subscription rate at that time was $1.50 per annum. Linton Rogers was general agent for Pittsburgh and vicinity. The publishers, E. Sibbet & Co., in 1836, advertised: "Drafts, Notes, and Bills, on any of the Banking Institutions of Pennsylvania, Ohio, Kentucky, Illinois, Indiana, &c., collected on the most reasonable terms. Western Bank Paper purchased and remitted for in eastern funds."[52]

In March, 1849, this reporter was known as *Sibbet's Western Review and Counterfeit Detector* (Vol. XII, March 1, 1849, No. 141), and was reported to have had a circulation of 3,000 in 1850. A change of name occurred in 1853, or prior thereto, as evidenced by the following advertisement:

Sibbet's Bank Note Review and Counterfeit Detector

It is the oldest Detector in the country with but one exception; being established in 1838, by Mr. Sibbet, then one of the principal bankers and exchange brokers of this city. It is now under the correcting supervision of S. Jones & Co., (formerly Sibbet & Jones,) one of the oldest and most firmly established firms in the west.

KENNEDY & BROTHER
Publishers and Proprietors.[53]

[51] *Sylvester's Reporter*, etc., May 21, 1838.

[52] *Harris' Pittsburgh Business Directory*, 1837.

[53] *Kennedy's Fac Simile Counterfeit Bank Note Detector & Coin Book*, 1853.

The statement that this publication "is the oldest Detector in the country with but one exception" is not borne out by the facts set forth herein. It was preceded by several years by Day's and Sylvester's in New York, Bicknell's in Philadelphia, and Thomas' in St. Louis. It was later succeeded by *Kennedy's Bank Note Review and Fac Simile Counterfeit Detector* which continued at least until 1856. The publishers of the last named periodical in January, 1854, issued an auxiliary to their counterfeit detector entitled *Western Price Current and Weekly Bank Note Review.*

The National Bank Reporter

According to a newspaper advertisement in 1865, Messrs. Feld and Lare, with offices in the Dispatch Building, Pittsburgh, Pennsylvania, were publishers of *The National Bank Reporter.* The April, 1865, issue was said to contain the latest information upon financial matters, counterfeit notes, etc. The subscription rate was two dollars per annum.[54]

There were two other reporters that appear to have been published in Pittsburgh around 1861, listed merely as *Bank Note Reporter* and *Bank Note Mirror.* The first named was said to be a weekly publication and the last named a semi-monthly and monthly publication.[55] The *Bank Note Mirror* may have been a local edition of one of John S. Dye's publications.

St. Louis

On February 14, 1764, a party of workmen landed at a point on the Mississippi River selected by Laclede for a trading post and settled on what is now the present site of St. Louis. It became an important center for traders who carried on an extensive traffic with the Indians on the Mississippi and Missouri Rivers. When Missouri was admitted to the Union in 1821, St. Louis had a population of

[54] *The Pittsburgh Dispatch*, April 15, 1865.

[55] Daniel J. Kenny, *The American Newspaper Directory and Record of the Press*, New York: 1861.

only 5,600, and it was some ten years later that the first bank note reporter was published there.

Thomas

On January 20, 1832, the Hon. Thomas H. Benton, United States Senator from Missouri, delivered a speech in the Senate of the United States which related to a resolution on the state of the currency. In this speech he referred to *Thomas' Counterfeit Note Detector* of St. Louis and quotes the following from the issue of that detector dated December 19, 1831: "The present number of the Detector contains the full list of all the different descriptions of counterfeit and altered notes that have been presented at my counter [the publisher's] since the publication of the first number on the 28th of April [1831]. You will find it has 159." Thomas conducted a brokerage office in St. Louis. Senator Benton also quoted this statement which appeared in the *Missouri Monitor* of January 1, 1832:

> The numerous counterfeits on the various Branches of the Bank of the United States has given rise to a new description of newspapers in St. Louis and many other places—necessary, and intended solely to guard the community against spurious Bank notes! The December number of Thomas' Counterfeit Note Detector exposes one hundred and fifty-nine varieties of counterfeit Bills.

This detector, the first to be published in St. Louis, appears to have been ante-dated by but three others: Day's and Sylvester's in New York City and Bicknell's in Philadelphia. No copies of this detector were found and its period of existence was not ascertained.

Presbury & Company

Presbury and Company's Counterfeit Detector was published in St. Louis in 1849. This periodical is referred to in the *Minnesota Pioneer* of January 9, 1850.[56] It was probably sponsored by George

[56] Sydney A. Patchin, "Banking in Minnesota," *Minnesota History Bulletin*, Vol. II (August, 1917), p. 122.

G. Presbury & Company who are listed as bankers in *Green's St. Louis Directory* for 1851. They were located at that time at 103½ N. Main Street, St. Louis. No copies were found and no further information was obtained with respect to this reporter.

Clark

In November, 1842, the banking firm of E. W. Clark & Brothers was established in St. Louis. This was the first branch to be added to the old stock and exchange brokerage house of Enoch W. Clark of Philadelphia, with which Jay Cooke, the noted financier of the Civil War, was long identified.[57]

This firm sponsored the publication of a counterfeit detector. While the date established was not definitely ascertained, it was, however, published as early as 1853, according to the following statement which appeared in *The Bankers Magazine and Statistical Register* for April, 1853, as quoted from an article in the *St. Louis Republican* (no date given) regarding Illinois bank notes: "On referring to Clark's Counterfeit Detector we find the following banks doing business in Illinois under the General Banking Law, ..." Then followed a list of several banks. The St. Louis directory for 1859 indicates that Robert L. Clarke was the publisher at that time. Just when this reporter ceased publication was not ascertained. It was found listed, however, in 1861, as being in existence at that time.[58]

St. Louis Bank Note Reporter

The St. Louis directory for 1860 lists Horatio Page as the editor of the *St. Louis Bank Note Reporter,* published on the first and fifteenth of each month. The reporter was also found listed as being in existence in 1861.[59]

Two other reporters were listed as having been published in St.

[57] Henrietta M. Larson, *Jay Cooke, Private Banker*, 1936, p. 54.

[58] Daniel J. Kenny, *op. cit.*

[59] *Ibid.*

Louis. *Bank Note Detector* was described as a monthly, with a circulation of 1,000.[60] The other, listed as *Lord's Detector,* was published at least from 1859 to 1861. In 1859, its publishers were Johnson, Phillips and Company and in 1860, "Lord's Detector Office" was located at 251 Broadway. This periodical may have had some connection with the Lord publications that appeared in Cincinnati for many years.

Zanesville

Zanesville Counterfeit Detector and Bank Note Reporter was published here from about 1842 to 1848 when its publisher moved to Cincinnati. For further details see under T. W. Lord in Cincinnati.

[60] *Livingston's Law Register*, 1852.

VI

CONTEMPORARY RELATED PUBLICATIONS

IT was common practice for publishers of bank note reporters to offer, in many instances gratis, to subscribers of their reporters, certain other publications of interest to those whose business dealings made it necessary for them to handle the confusing circulating media of the State bank note era. This record would be quite incomplete without some reference to these publications which took the form of descriptive lists of genuine notes, bank note plate delineators, facsimile signatures of bank officers, and coin chart manuals. There follow the names and a description of such publications that came to light during the compilation of this work.

Sylvester's Bank Note and Exchange Manual

In January, 1833, S. J. Sylvester issued in New York City a publication entitled *Sylvester's Bank Note and Exchange Manual.* It consisted of thirty-two pages, about octavo in size. Its prospectus contained the following description of its contents:

> This pamphlet is offered to the public as a convenient manual for businessmen generally, and it will be found a safe guide on the subject of the value of Bank Notes, as well as a Detector of Counterfeit Bills and the Rates of Exchange. The subscriber is induced to compile the information in this form from the fact that such a publication is called for by many of his patrons in preference to a newspaper. From his experience for many years as an Exchange Broker, and as publisher of "Sylvester's Reporter," a weekly paper now honored with an extensive patronage, the public may rely on the present publication for its correctness, and he has full confidence that it will be favorably received.

They were sold at 12½¢ each and contained a list of solvent banks, insolvent banks and fraudulent institutions, together with a list of counterfeit and altered notes.

Bank Note Descriptive Lists

Thompson — New York

John Thompson of New York at various times made available "to all subscribers of his bank note reporter who paid one year in advance" no less than three different supplements. One of these, entitled *Bank Note Descriptive List,* was described as containing accurate descriptions of all the "Genuine Bank Notes issued by the Banks in the United States and Canada."

The earliest copy discovered is dated 1859 (not numbered), about quarto in size, and contains upwards of eighty pages. In 1861, the Fourteenth Edition appeared, and in 1866 the Twenty-eighth Edition was published. Thompson's *Descriptive List* was published as late as 1867, then described as the "Thirty-First Edition." One unique feature of the Twenty-third Edition, a pamphlet of ninety-six pages and dated 1864, is that a facsimile of the State seal that appeared on many State bank notes at that time, as well as the Original Series of national bank notes, is shown preceding the descriptive list of notes of each State. These publications also contained a list of "broken" and "retired" banks.

The descriptive data of individual bank notes was rather brief and can best be illustrated by a reprint of the description of genuine notes issued in 1861 by The Cataract City Bank of Paterson, New Jersey.

Cataract City Bank, Paterson

1s, hogs, fowls, &c., in round die, ONE on left–1, die–ONE across. ¶

2s, waterfall, men at work, houses, &c. TWO on right, die, on left–2, TWO across–2, TWO. ¶

3s, Indian family on a cliff overlooking a city, THREE above them, THREE below–3, die–THREE. ¶ ☞

5s, signing Declaration of Independence, pale red 5 each side–5, arms–5, female portrait. ¶

10s, Penn's treaty with the Indians–10, Liberty surrounded by stars –X, arms. ¶

In an explanation of the key, the publisher stated that "in giving a description of a genuine bill, we divide the note into four parts: 1st, The vignette; 2d, The right end; 3d, The left end; and 4th, The engraving (if any) between the President and Cashier's Signatures, each part separated by a dash (—). . . ." He also stated that an index (☞) means that there are imitation counterfeits on that particular plate and a paragraph sign (¶) denotes that the particular note is printed in colors, which effectually guards against photographic counterfeits.

Adams — Chicago

In 1861, F. Granger Adams (son-in-law of John Thompson), then the publisher of *The Chicago Bank Note List*, furnished to his subscribers a descriptive list of genuine bank notes almost identical in form to that of Thompson's *Bank Note Descriptive List*.

White — Cincinnati

The Union Bank Reporter Publishing Company in 1859 were the publishers of *The Describer of Genuine Bank Notes*, a supplement to *White's Reporter and Counterfeit Detecter*. It was octavo in size and consisted of seventy-six pages, containing "accurate descriptions of all the notes issued by the banks of the United States and Canada." It was given free to all subscribers of the reporter.

The only copy of this publication found indicates that it is none other than Thompson's *Descriptive List of Genuine Bank Notes* for the same year. Thompson's cover page has been detached and a new cover affixed. On page three, at the only place where Thompson's name and the title of his work appear, a paster about two by six inches in size has been used to cover them. This paster bears an imprint reading, "The Describer of Genuine Bank Notes—Supplementary to White's Bank Reporter."

Brown — Detroit

In 1859, a bank note descriptive list was furnished supplemen-

tary to *Brown's Bank Note Reporter* of Detroit. It is a pamphlet of seventy-six pages, similar in form to that of *Thompson's Bank Note Descriptive List,* which was given free of charge to all subscribers to the reporter who paid one year's subscription in advance.

Preston — Detroit

Preston's Detroit and Chicago Bank Note Reporter for March 1, 1864, indicates that subscriptions to their publication included a "descriptive list."

Hodges — New York

In 1859, J. Tyler Hodges, a bank note reporter publisher in New York, made available *Hodges' Genuine Bank Notes of America.* This publication followed the same format as that of Thompson's list. Apparently they both first appeared in 1859. Just who was the originator of this style of publication is not known. While it appears that Thompson issued at least thirty-one editions of his descriptive list, only one edition of Hodges' list was found. It is about 11½ by 9 inches in size and consists of forty pages. On the title page is found the following brief description of its contents: "The only original and correct work ever published, except the BANK NOTE SAFE-GUARD, giving plain, succinct, and RELIABLE DESCRIPTIONS of every genuine bank note of every denomination on every bank in the UNITED STATES & CANADA."

Monroe's — New York

A publication entitled *Monroe's Descriptive List of Genuine Bank Notes* was in existence during the State bank note era. It was said to contain 1,323 separate descriptions of notes.[1] It was probably sponsored by John Monroe, who, in 1857 and 1858, was associated with John Tyler Hodges, a publisher of a bank note reporter at that time, and also a publisher of a descriptive list.

[1] Horace White, *Money and Banking*, 5th ed.; New York: 1914, p. 329.

Clarke's Descriptive List—St. Louis

According to an advertisement in the St. Louis directory for 1859, Robert L. Clarke was the publisher of *Clarke's Descriptive List of Genuine Bank Notes.*

Clark's Monetype — St. Louis

During the State bank note era a publication was issued under the above title and under the sponsorship of E. W. Clark & Brothers. It was described as being a pamphlet consisting of seventy-six pages (date not mentioned), containing descriptions and many facsimiles of the currency listed, and said to have been the only guide to "wild-cat currency" published in St. Louis.[2]

Dye's Bank Note Plate Delineator

This book is described by its publisher as a spurious and altered bill detector, giving printed descriptions of the genuine notes of every denomination of all the banks doing business throughout the United States and British North America. The publisher, John S. Dye, as previously stated was an exchange broker, located at 172 Broadway, corner of Maiden Lane, New York City, where he also published *Dye's Bank Mirror.*

Dye stated in part in the 1855 "Complete" edition, which appears to have been the first: "After three years of incessant toil this work has at length been completed. Perhaps no book, in this or any other language, has been got up at such expense, and we can safely say that none can surpass it in value for Commercial purposes." [3]

Dye stressed the point that no detector ever was published that described the genuine note, the force of all publications being directed towards the spurious, altered, and counterfeit notes. He goes on to say: "The most numerous class are spurious, notes that bear no

[2] Henrietta M. Larson, *Jay Cooke, Private Banker*, 1936, p. 58.

[3] *The Bankers' Magazine and Statistical Register*, May, 1855, p. 907, refers to *Dye's Bank Note Plate Delineator* and states that, "A useful publication has just been issued."

resemblance to the genuine, these are killed at sight, as you have in your own hand the likeness or daguerreotype of the genuine, and the dress and design of the two notes may be as different as that of a lady and gentleman." Dye pointed out further that: "The Delineator detects all past, present, and future spurious or altered notes, and has accomplished more to protect the Commercial interests of this country than all the Reporters and Detectors that have ever been published, for all they can do at most is to cry thief after the goods have been stolen."

The 1855 edition consists of 288 pages and contains the names of approximately 1,200 banks then in operation throughout the United States and Canada. Each page, twelve by seven inches in size, contains three columns of nine rectangular blocks about 1¼ inches wide by 2¼ inches long wherein is given a brief description of notes issued by the respective banks. (*See* Plate XIX.) No other "Complete" editions were found. The publisher, however, in the same year issued another edition similar in format entitled "Parts I & II." This edition contained the names and descriptions of notes of 419 banks located in New York, Massachusetts, Pennsylvania, and Maryland. In this edition the following statement was found (p. 133): "The third number of the Delineator will be published in a short time." No other editions were found.

Hodges' Safe-Guard

The aforementioned bank note plate delineator published by John S. Dye in 1855 appears to have had a rather brief existence. Another publisher, however, felt that there was a need for such a publication, and, in 1857, J. Tyler Hodges, the publisher of a bank note reporter, undertook the publication of *Hodges' New Bank Note Safe-Guard*. The description of the notes and the style in which they are presented is identical with that of Dye's *Delineator*, while the prospectus or introduction is so similar to that of Dye's that one is lead to believe that the entire work of Hodges in 1857

was pirated from Dye's work in 1855, with no credit given to the latter for the originality exhibited by him. It will be noted later that there can be no question that Hodges' publication was originally prepared from the identical plates used by Dye.

In 1855, Dye stated that, "After three years of incessant toil this work has at length been completed." Hodges in 1857 stated that, "After years of toil and great expense, this work has at length been completed, ..." In 1855, Dye stated:

> The DELINEATOR detects all past, present, and future spurious or altered notes, and has accomplished more to protect the Commercial interests of the country than all the Reporters and Detectors that have ever been published, for all they can do at most is to cry thief after the goods have been stolen.

Along these same lines, Hodges in 1857 stated:

> In a word, THE SAFEGUARD detects all past, present and future spurious and altered notes, and is of more value, protection and security to the commercial interests of the country, than all the Detectors, Bank Note Lists, and other works, which up to this time have been published. In fact the SAFE-GUARD is almost indispensable, for it goes ahead of, and anticipates the counterfeiter, cutting off his success, while the Reporters and Bank Note Lists but follow after, and to use a homely, but forcible expression, "can only lock the stable after the horse is stolen."

Hodges also comments on the great superiority of the SAFE-GUARD over all reporters and bank note detectors notwithstanding the fact that he was the publisher of such a periodical at the same time. The foregoing statements questioning the originality of Hodges' publication have some confirmation when identical typographical errors in both publications are pointed out. In Dye's *Delineator* for 1855 and Hodges' *Safe-Guard* for 1857, a comparison of the index of New York banks discloses in both publications the following identical errors in the spelling of place names; Glens Falls as Glen*ns* Falls, Ithaca as Ith*i*ca, Onondaga as Onondag*o*, and West

Winfield as West Wind*d*field. We find also on page 238 of each publication, "Central Bank" as "Central Ba*k*k."

Hodges' *Safe-Guard* was published in several editions over a period of about ten years.[4] It appears to have been first issued in 1857 as *Hodges' New Bank Note Safe-Guard*, having been arranged and published at that time by J. Tyler Hodges. It consisted of 326 pages as compared to Dye's *Delineator* for 1855 consisting of 288 pages. Other editions found were the 3rd Quarterly Edition in 1858, the 4th Quarterly Edition in 1858, the First Quarterly Edition in 1859, and the 4th Quarterly Edition in 1860, which had then expanded to 380 pages. The 1861 edition was published by Daniel M. Hodges, a brother of J. Tyler Hodges. His name also appears on a revised edition in 1861 with the title changed to *Hodges' American Bank Note Safe-Guard.* The 1862 revised edition was also published under the same sponsorship. Late in 1862, the following announcement with respect to this publication was made: "Our last edition, *the tenth,* revised and corrected to November 1, 1862, is now ready." [5] From this statement it appears that there were two or three editions besides those referred to above. The 1863 revised edition was published by Edwin M. Hodges, a son of Daniel M. Hodges, as was the 1864 edition and the revised edition of 1865. The last named was probably the last edition of this interesting publication, as no numbers bearing a later date were found.

Gwynne & Day's Descriptive Register

Gwynne & Day, bankers, with offices at 12 Wall Street, New York, were, in 1859, the publishers of a book entitled *The Descriptive Register of Genuine Bank Notes.* They stated that this register was for the detection of spurious and altered bills and contained accurate, elaborate and plain descriptions of the notes issued by every bank in the United States and Canada. They acknowledged

[4] *See* appendix for the location of some of the existing editions.

[5] *Hodges' Journal of Finance & Bank Reporter*, December 1, 1862.

"their indebtedness to the several firms now comprising The American Bank Note Company for much valuable information." This book, about 11½ by 8 inches in size, consists of 143 pages and contains the names of more than 1,400 banks with a brief description, in narrative form, of the genuine notes issued by those banks. They announced that a supplement to the book, containing a description of all new notes and the bills of all banks organized after its publication, would be issued as often as deemed necessary and would be given gratis to the subscribers of *The Bank Note Register* which was published under their sponsorship.

This register appeared in several editions, the following dates having been noted: 1859, 1860, 1862, 1863, and 1866, the last named being described as "The Fourteenth Edition." The 1862 edition was issued from the office of *The Metropolitan Bank Note Reporter*, while the 1866 edition was put out by H. J. Messenger, who was at that time the publisher of *Metropolitan National Bank Note Reporter.*

Kennedy's Descriptive List

According to the copyright registration imprint, Messrs. Kennedy and Brother of Pittsburgh published in 1857 a paper-covered book about eleven by seven inches in size consisting of 166 pages which was entitled *Description of Genuine Bank Notes.* It was published at the Kennedy Review Office in Pittsburgh, which concern also published a counterfeit detector.

The format of this register is quite similar to that of Gwynne & Day. It includes a description in narrative form of the notes issued by the banks of that period. The index of this book contains a list of all the banks in straight alphabetical sequence by name, rather than in sequence by states. It devotes 128 pages to the description of bank notes and 38 pages to the reproduction of facsimiles of gold and silver coins of the world. While the registration imprint is dated 1857, the back cover page contains a monthly calendar for the year

1861. Notes are described therein of several banks that suspended prior to 1860.

Kennedy's Fac Simile Counterfeit Note Detector

Kennedy and Brother of Pittsburgh also put out a publication entitled *Kennedy's Fac Simile, Ein Supplement Zu ihrem Vereinigte Staaten Banknoten Kenner (A Supplement To Their Bank Note Guide).* This publication, about quarto in size, the text of which is in German, contains a number of full size illustrations of notes in circulation at the time, together with a list of closed banks. While undated, there appears on the outside cover page a calendar for the year 1853.

This same firm also published *Kennedy's Fac Simile Counterfeit Note Detector*. One issue appeared the same year as the previously described publication. Another issue of this same publication is dated 1856 and contained merely 32 full sized illustrations of counterfeit notes. It was described as a supplement to their *Western Review.*

The Autographical Counterfeit Detector

Probably the most unique publication in the banking field, during the period under review or at any other time, was that entitled *The Autographical Counterfeit Detector*. It was sponsored by John Thompson and in his reporter for January 23, 1851, he said, "This work is the greatest Autographical curiosity in the world, embracing over 1,500 Facsimile Signatures of the different Bank Officers in the United States."

The earliest edition located, a pamphlet of sixty pages, is dated 1849 and described as a companion to *The Bank Note Reporter*, given free to all weekly and semi-monthly subscribers to the reporter. Single copies were sold at twenty-five cents each. The information contained therein was compiled and arranged by J. Thompson, Stock and Exchange Broker, and published by Wm. W. Lee at No. 12 Spruce Street, New York City. The Fourth Edition

(1851) was a pamphlet of sixty-six pages, while the Fifth Edition (1853) and probably the last, less than octavo in size, consisted of seventy-five pages. It was said to contain the facsimile signatures of the president and cashier of *nearly* every bank in the United States.

Page 44 of the Fifth Edition (Plate XVII) shows among others the signature of the cashier of the Mohawk Valley Bank of Mohawk, New York, who at that time was none other than Francis E. Spinner who later served as Treasurer of the United States from March, 1861, to June, 1875. His striking signature is found on most of the United States currency issued during that period.

While the facsimile signatures presented in this detector were of great value to those handling State bank notes who might question the genuineness of signatures appearing thereon, they were no doubt of inestimable value to the swindler and crook engaged in counterfeiting such notes. For that reason alone it is rather surprising that such a publication ever existed.

Taylor's Signature Examiner

In 1849, C. S. Sloane, a specie and exchange broker, 23 Wall Street, New York City, published *Taylor's Signature Examiner*, it being a supplement to *Taylor's U. S. Money Reporter, and Gold and Silver Examiner*. This pamphlet, about octavo in size, consists of sixty-four pages and is described as containing "facsimile engravings of the signatures of the Presidents and Cashiers of all the banks in the Union." The engravings from which the signatures were printed were executed on wood by J. W. Orr, 75 Nassau Street, New York.

The object of this publication was as an aid in detecting counterfeit notes. Its format and contents was quite similar to that of Thompson's *The Autographical Counterfeit Detector*.

The following detailed description of its contents is found on the inside cover page:

As an aid in detecting Counterfeit Bank Notes, the Publisher has thought no more effectual means could be adopted than to publish fac-simile Engravings of the Signatures of the Presidents and Cashiers of all the Banks in the Union.

The accompanying engravings are exact imitations of the signatures they represent, the greatest care having been taken both in drawing and engraving. The publisher, however, wishes it to be understood that he does not guarantee that the engravings given will correspond in every single line and mark with genuine signatures with which they may be compared, inasmuch as the various signatures of any person will vary more or less, he can only guarantee the general character and expression of the signatures to be correct.

The Banks are arranged by States, in the same order as in the MONEY REPORTER, Subscribers to the "Money Reporter," are entitled to a copy of the SIGNATURE EXAMINER, free of extra charge; and will receive a fresh copy when ever any alterations are made. Monthly subscribers to the "Reporter" will be served one year for one dollar—three copies for two dollars.

CHARLES & LEONORI'S SIGNATURE EXAMINER

About 1850, Charles & Leonori began the publication of a bank note reporter, which, as previously related, appears to have been the successor of two other reporters, one of which was established by one Taylor for whom the above signature examiner was named.

This firm, in about 1850, issued a signature examiner, which was, except for the cover pages, prepared from the identical plates from which Taylor's examiner was printed. It is entitled *Charles & Leonori's (Late Taylor's) Signature Examiner.*

COIN CHART MANUALS

Another supplement to *Thompson's Bank Note and Commercial Reporter* was known as *The Coin Chart Manual.* It appeared as early as 1848. An advertisement in *The Autographical Counterfeit Detector* for 1849 describes *The Coin Chart Manual* as containing

over eight hundred and fifty facsimiles of various gold and silver coins found in circulation. It was sent free to every regular yearly subscriber of the *Reporter*. Single copies were sold at 12½ cents each. The edition of 1853, about octavo in size, contains fifty-six pages, and was described as containing "1125 fac-similes of the various gold and silver coins found in circulation." This manual was published at least until 1877. The "thoroughly revised" edition (Vol. 45) of that year was described as "containing the facsimiles of all the gold and silver coins found in circulation throughout the world, with the intrinsic value of each."

A coin chart manual, somewhat similar in style to that of Thompson, was furnished as a supplement to several other reporters. In 1847, S. Taylor put out *Taylor's Gold and Silver Coin Examiner,* a pamphlet of sixteen pages; in 1853, Bicknell (Philadelphia) issued *The American Book of Coins* (48 pp.); about 1854, *Dye's Gold and Silver Coin Chart Manual* was published by John S. Dye in both New York and Cincinnati; around 1855, Hodges (New York) published *Hodges' Gold and Silver Coin Chart Manual;* about 1859, *Peterson's* (Philadelphia) *Complete Coin Book* appeared; around 1859, *Clarke's* (St. Louis) *Coin Chart* made its appearance; about 1860, *The Metropolitan Bank Note Reporter* (New York) put out the Metropolitan *Coin Book* as a supplement; and in 1862, *Preston's* (Detroit) *U. S. Bank Note and Commercial Reporter* offered a *Coin Chart Manual* as a supplement to their publication.

Appendix

WHILE many of these periodicals are known to the writer merely by name and few were found in the *Union List of Serials* (1943), a sufficient number came to light in libraries and historical societies throughout the country to warrant the compilation of this appendix. With the exception of the first four years that bank note reporters were published there is at least one monthly issue recorded in this appendix for each year from 1830 to 1866 inclusive. This record may be helpful to researchers and others in establishing the existence of a particular bank at a particular time and may furnish other information relating to banks and banking during that period.

This does not purport to be a complete list of all such periodicals in existence. It does, however, contain a reference to those found in the more important libraries and historical societies. In a few cases where a complete file is available for a particular calendar year, no reference has been made to individual issues for that particular year found in other places. It does not include any reference to issues held in private collections. A key to the dates of issues as well as a key to their location follows this compilation.

Following the schedule of bank note reporters is a list of the locations of copies of Hodges' Bank Note Safe-guards for the years 1857 to 1865 inclusive.

Bank Note Reporters

Year	*Name and Place*		*Issues*	*Location*
1830	Day	N. Y.	8	24
1831	Sylvester	N. Y.	3.6.7	1
1832	Sylvester	N. Y.	2	13
1832	Sylvester	N. Y.	10	14
1833	Bicknell	Phila.	5	4
1833	Day	N. Y.	6	28
1833	Sylvester	N. Y.	8	1
1833	Sylvester	N. Y.	12	25
1834	Bicknell	Phila.	4	20
1834	Bicknell	Phila.	7	21
1834	Bicknell	Phila.	11	3

Year	*Name and Place*		*Issues*	*Location*
1835	Bicknell	Phila.	2	11
1835	Bicknell	Phila.	4.9.10	3
1836	Bicknell	Phila.	1	17
1836	Bicknell	Phila.	2.6.9	3
1836	Bicknell	Phila.	7.10.11.12	11
1837	Day	N. Y.	5	2
1837	Day	N. Y.	9	19
1837	Bicknell	Phila.	-5-	11
1837	Bicknell	Phila.	7	2
1837	Sylvester	N. Y.	12	1
1838	Clark	Boston	3.4.5.6	28
1838	Sylvester	N. Y.	10	19
1839	Clark	Boston	(M)	28
1839	Van Court	Phila.	-11-	21
1839	Sylvester	N. Y.	8	26
1840	Van Court	Phila.	(M)	21
1840	Clark	Boston	-9-	28
1840	Bicknell	Phila.	2	11
1840	Goodman	Cinn.	2	10
1840	Sylvester	N. Y.	3	16
1840	Day	N. Y.	4	22
1840	McIntyre	N. Y.	5.10	27
1840	Day	N. Y.	12	28
1841	Van Court	Phila.	(M)	21
1841	Goodman	Cinn.	2	10
1841	Day	N. Y.	11	28
1841	Clark	Boston	11	28
1842	Van Court	Phila.	(M)	21
1842	Charles	N. Y.	3.4	25
1842	Clark	Boston	3.5.11	28
1842	Thompson	N. Y.	9	3
1842	Sylvester	N. Y.	-5-	25
1843	Van Court	Phila.	(M)	21
1843	Bicknell	Phila.	1	17
1843	Bicknell	Phila.	9	27
1843	Bicknell	Phila.	11	17
1843	Willis	Boston	10.11.12	5
1843	Willis	Boston	11.12	28

Year	Name and Place		Issues	Location
1844	Van Court	Phila.	(M)	21
1844	Willis	Boston	(M)	5
1844	Thompson	N. Y.	3	18
1844	Thompson	N. Y.	4.5	17
1845	Willis	Boston	(M)	5
1845	Willis	Boston	(M)	28
1845	Clark	Boston	4.6.12	28
1845	Bicknell	Phila.	11	17
1845	Clark	Boston	12	7
1845	Goodman	Cinn.	-6-	9
1845	Bicknell	Phila.	-10-	3
1845	Van Court	Phila.	-11-	21
1846	Van Court	Phila.	(M)	21
1846	Willis	Boston	(M)	5
1846	Goodman	Cinn.	(M)	9
1846	Thompson	N. Y.	3	17
1846	Bicknell	Phila.	5	28
1846	Goodman	Cinn.	6	10
1846	Sylvester	N. Y.	11	1
1846	Clark	Boston	11	7
1846	Bicknell	Phila.	12	17
1846	Taylor	N. Y.	12	28
1846	Bicknell	Phila.	-13-	3
1847	Van Court	Phila.	(M)	21
1847	Willis	Boston	(M)	5
1847	Taylor	N. Y.	2.6	23
1847	Charles	N. Y.	3	7
1847	Taylor	N. Y.	3.5.8.12	7
1847	Taylor	N. Y.	3.12	28
1847	Mearson	N. Y.	6	3
1847	Goodman	Cinn.	-6-	9
1847	Bicknell	Phila.	-18-	3
1848	Van Court	Phila.	(M)	21
1848	Willis	Boston	(M)	5
1848	Thompson	N. Y.	2	28
1848	Thompson	N. Y.	5	1
1848	Thompson	N. Y.	7	7
1848	Thompson	N. Y.	7	7

Year	*Name and Place*		*Issues*	*Location*
1848	Taylor	N. Y.	8	27
1848	Goodman	Cinn.	9	15
1848	Thompson	N. Y.	10	3
1848	Sylvester	N. Y.	11	19
1848	Bicknell	Phila.	-17-	3
1849	Van Court	Phila.	(M)	21
1849	Willis	Boston	(M)	5
1849	Thompson	N. Y.	3	18
1849	Thompson	N. Y.	3	28
1849	Sylvester	N. Y.	9	2
1849	Bicknell	Phila.	-10-	3
1850	Van Court	Phila.	(M)	21
1850	Willis	Boston	(M)	5
1850	Bradley	Cinn.	2	10
1850	Bicknell	Phila.	-5-	3
1851	Van Court	Phila.	(M)	21
1851	Willis	Boston	(M)	5
1851	Thompson	N. Y.	1	18
1851	Bicknell	Phila.	1.3	3
1851	Thompson	N. Y.	-5-	28
1852	Van Court	Phila.	(M)	21
1852	Willis	Boston	(M)	5
1852	Thompson	N. Y.	-23-	28
1853	Van Court	Phila.	(M)	21
1853	Willis	Boston	(M)	5
1853	Sheldon	Chic.	7	8
1853	Thompson	N. Y.	-19-	28
1854	Van Court	Phila.	(M)	21
1854	Thompson	N. Y.	6	1
1854	Lord	Cinn.	7	16
1854	Thompson	N. Y.	8	27
1854	Willis	Boston	(9)	5
1854	Thompson	N. Y.	-19-	28
1855	Van Court	Phila.	(M)	21
1855	Thompson	N. Y.	12	3
1855	Thompson	N. Y.	-18-	28
1856	Van Court	Phila.	(M)	21
1856	Thompson	N. Y.	6	28

Year	*Name and Place*		*Issues*	*Location*
1856	Thompson	N. Y.	8	28
1857	Thompson	N. Y.	(W)	27
1857	Van Court	Phila.	(M)	21
1857	Lord	Cinn.	2	28
1858	Van Court	Phila.	(M)	21
1858	Thompson	N. Y.	6	3
1858	Thompson	N. Y.	12	1
1858	Lee	Buff.	-6-	6
1859	Thompson	N. Y.	(W)	27
1859	Brown	Detroit	-25-	12
1859	Lee	Buff.	-45-	6
1860	Thompson	N. Y.	1	28
1861	Hodges	N. Y.	-19-	3
1862	Nicholas	N. Y.	1	19
1862	Hodges	N. Y.	-10-	3
1863	Metrop.	N. Y.	8	23
1863	Nicholas	N. Y.	9	19
1863	Hodges	N. Y.	-10-	3
1864	Thompson	N. Y.	1	28
1864	Nicholas	N. Y.	1.2	19
1864	Thompson	N. Y.	2	28
1864	Preston	Detroit	3	12
1864	Hodges	N. Y.	-9-	3
1865	Thompson	N. Y.	10	28
1865	Hodges	N. Y.	-11-	3
1866	Imlay & Bick.	Phila.	1	17
1866	Hodges	N. Y.	1.2.3.4	3
1866	Thompson	N. Y.	-8-	18

Key to Issues of Bank Note Reporters

1. Numbers 1 to 12, either singly or separated by a period or periods, indicate the month or months of issue as:
   1, January; 2, February; 3, March; 6.10, June and October; 2.4.8, February, April, and August.
2. A number shown in this manner -14- indicates fourteen different issues in the particular year.
3. (W) Weekly issues for the entire year.
4. (M) Monthly issues for the entire year.

Key to Locations of Bank Note Reporters

1. New York State Library, Albany, New York.
2. University of Michigan, Ann Arbor, Michigan.
3. Baker Library, Harvard University Graduate School of Business Administration, Boston, Massachusetts.
4. Massachusetts Historical Society, Boston, Massachusetts.
5. The Public Library of the City of Boston, Massachusetts.
6. Buffalo Historical Society, Buffalo, New York.
7. Harvard College Library, Cambridge, Massachusetts.
8. Chicago Historical Society, Chicago, Illinois.
9. Cincinnati Public Library, Cincinnati, Ohio.
10. Historical and Philosophical Society of Ohio, Cincinnati, Ohio.
11. The Western Reserve Historical Society, Cleveland, Ohio.
12. The Public Library (Burton Historical Collection), Detroit, Michigan.
13. Duke University Library, Durham, North Carolina.
14. State Library and Museum, Harrisburg, Pennsylvania.
15. Indiana State Library, Indianapolis, Indiana.
16. State Historical Society, Madison, Wisconsin.
17. Rutgers University Library, New Brunswick, New Jersey.
18. The New-York Historical Society, New York, New York.
19. The New York Public Library, New York, New York.
20. American Philosophical Society, Philadelphia, Pennsylvania.
21. Library Company of Philadelphia, Pennsylvania.
22. Westerly Public Library, Westerly, Rhode Island.
23. The Essex Institute, Salem, Massachusetts.
24. Henry E. Huntington Library and Art Gallery, San Marino, California.
25. Union College Library, Schenectady, New York.
26. University of Illinois Library, Urbana, Illinois.
27. The Library of Congress, Washington, D. C.
28. American Antiquarian Society, Worcester, Massachusetts.

HODGES' BANK NOTE SAFE-GUARD

Year	*Edition*	*Location*
1857	- O -	The American Numismatic Society, New York, New York.
1858	3rd Quarterly	Baker Library, Boston, Massachusetts.
1858	4th Quarterly	Library of Congress, Washington, D. C.
1859	1st Quarterly	Columbia University, Business Library, New York, New York.
1859	1st Quarterly	Baker Library, Boston, Massachusetts.
1860	4th Quarterly	Baker Library, Boston, Massachusetts.
1860	4th Quarterly	The American Numismatic Society, New York, New York.
1861	- O -	Baker Library, Boston, Massachusetts.
1861	Revised	Baker Library, Boston, Massachusetts.
1862	Revised	Library of Congress, Washington, D. C.
1862	- O -	Essex Institute, Salem, Massachusetts.
1863	Revised	Massachusetts State Library, Boston, Massachusetts.
1863	- O -	Library of Congress, Washington, D. C.
1864	- O -	The American Numismatic Society, New York, New York.
1865	- O -	Massachusetts State Library, Boston, Massachusetts.
1865	- O -	Baker Library, Boston, Massachusetts.

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New York Journal of Commerce.
New York Packet.
New-York Shipping and Commercial List.
The New York Tribune.
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The Pittsburgh Dispatch.
The Public Ledger (Philadelphia).
St. Augustine (Florida) *News.*
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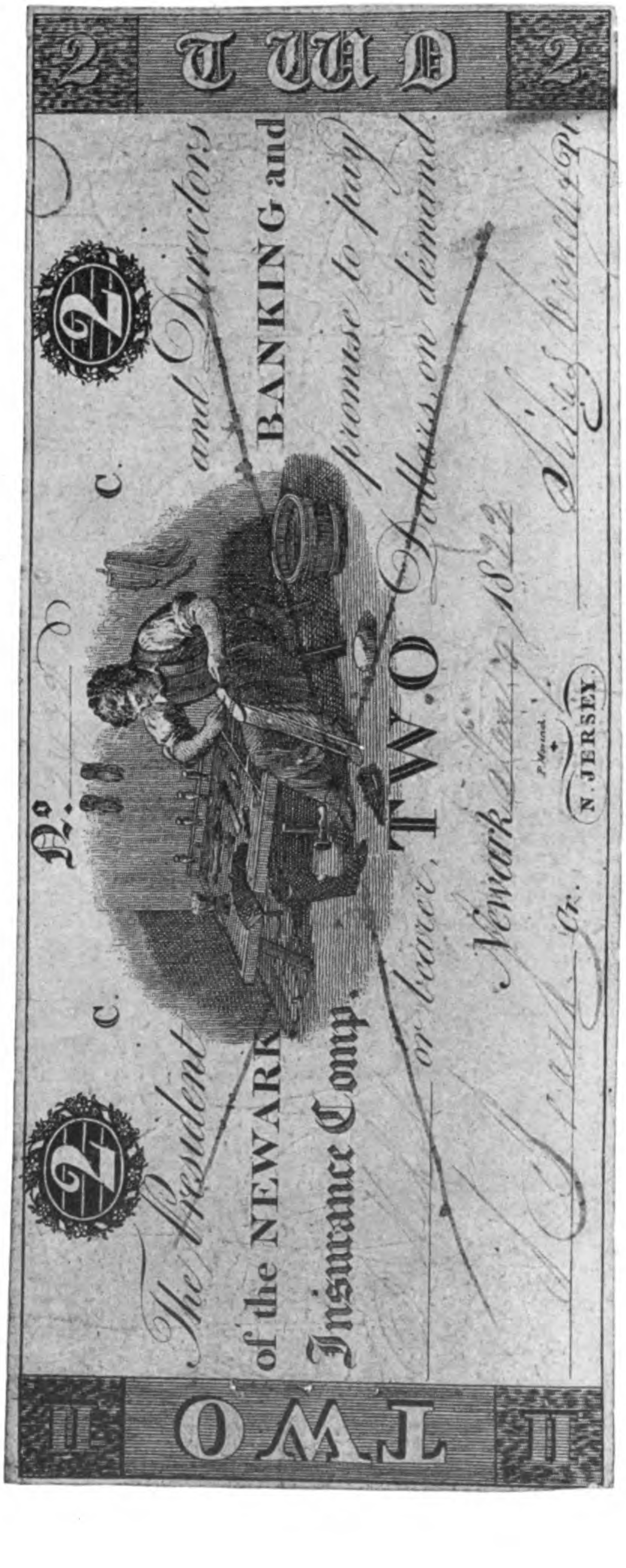
Index

PLATES

COUNTERFEIT NOTE — THE PATERSON BANK



COUNTERFEIT NOTE—
NEWARK BANKING AND INSURANCE COMPANY

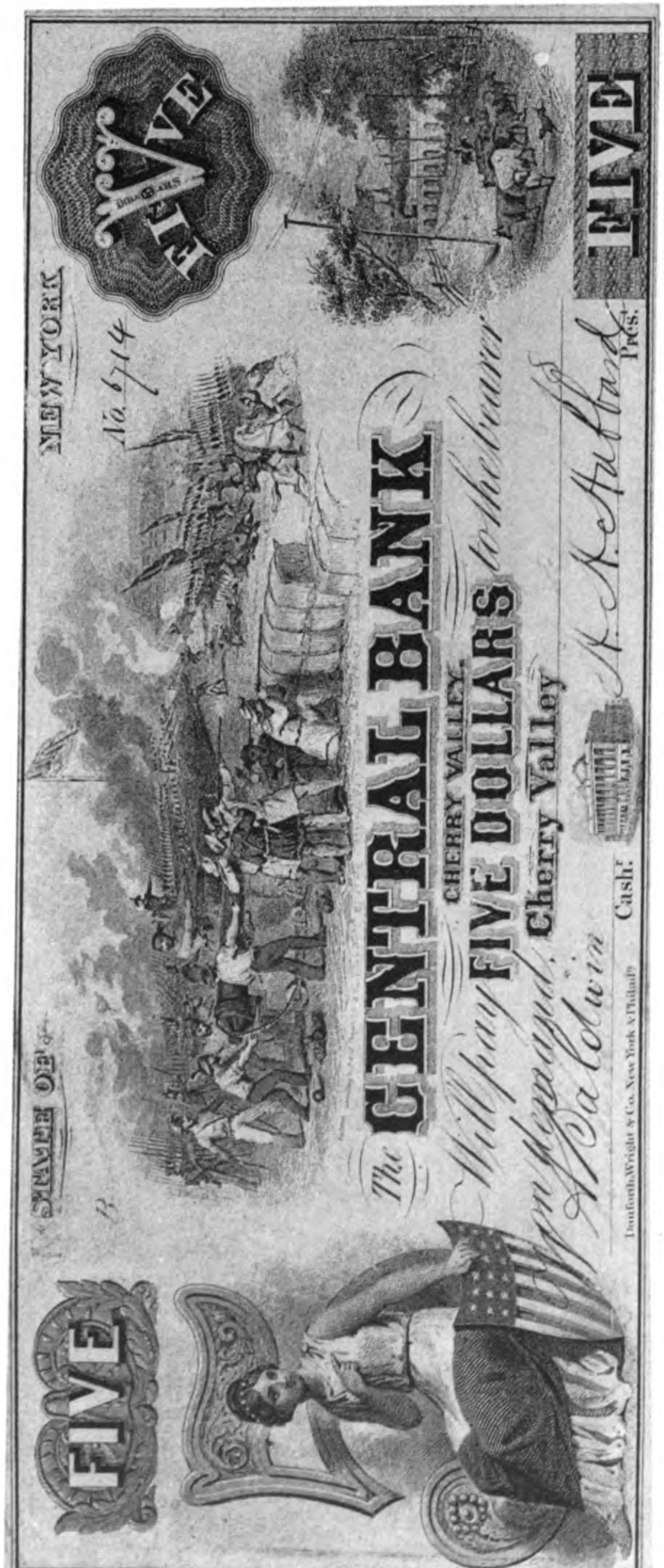
SPURIOUS NOTE — THE BANK OF NEW YORK

SPURIOUS NOTE — THE BANK OF NEW YORK

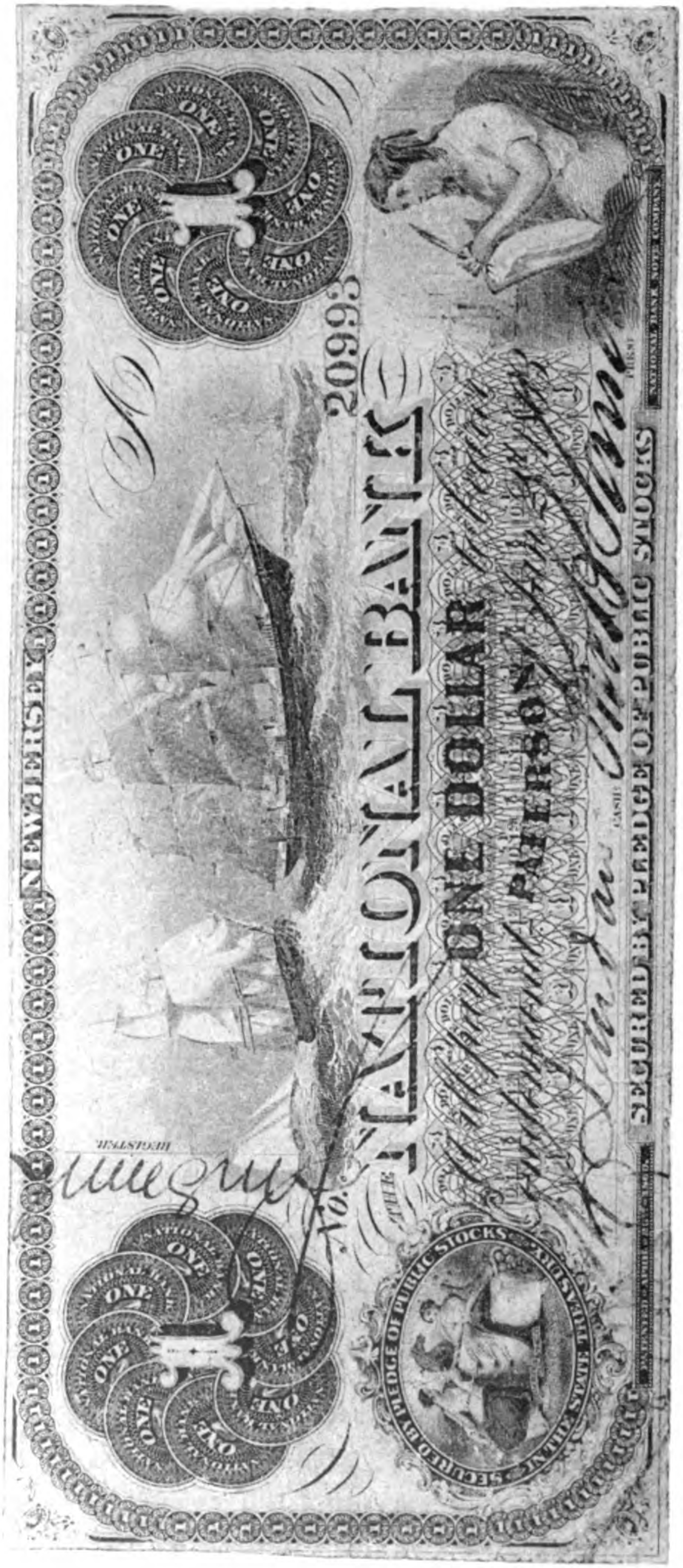
GENUINE NOTE — THE CENTRAL BANK OF TENNESSEE

ALTERED NOTE — THE CENTRAL BANK OF TENNESSEE

GENUINE NOTE — THE CENTRAL BANK OF TENNESSEE

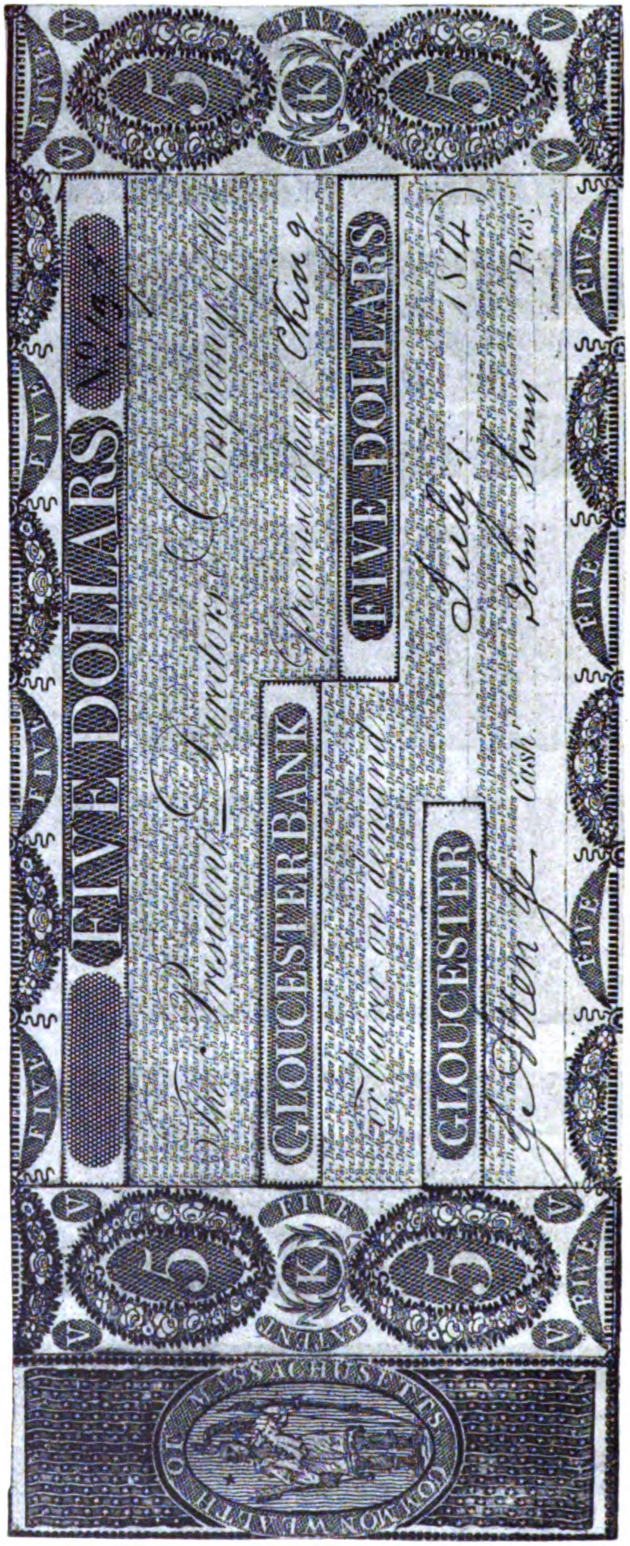


ALTERED NOTE — THE CENTRAL BANK OF TENNESSEE

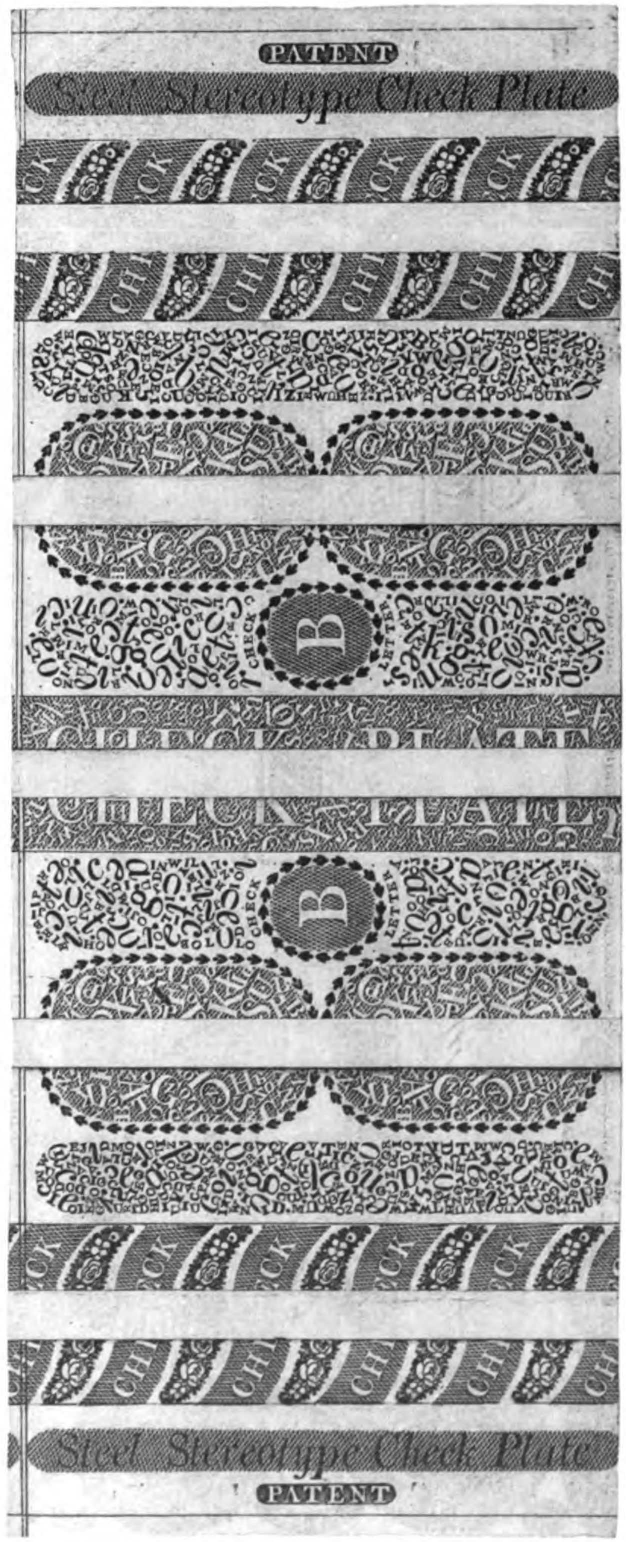


GENUINE NOTE—
THE NATIONAL BANK, PATERSON, NEW JERSEY

RAISED NOTE —
THE NATIONAL BANK, PATERSON, NEW JERSEY



GENUINE NOTE — THE GLOUCESTER BANK (Obverse)



GENUINE NOTE — THE GLOUCESTER BANK (Reverse)

POST NOTE — THE NORTH RIVER BANKING CO.

POST NOTE — THE CITY TRUST & BANKING COMPANY

POST NOTE — THE GLOBE BANK, NEW YORK

POST NOTE — THE NEW-YORK LOAN COMPANY

44

NEW YORK STATE.

Merchants' & Mechanics' Bank.—Syracuse.

E. T. Lathrop, Cashier
I. Smith, President.

Merchants' & Mechanics' Bank of Troy.

T. Taylor, Cashier.
D. T. Vail, President.

Middletown Bank.

W. M. Graham, Cashier.
Joseph Davis, President.

Mohawk Bank.

N. Switz, Cashier.
D. L. Campbell, President.

Mohawk Valley Bank.

F. E. Spinner, Cashier.
B. Carver, President.

Montgomery County Bank.

Ed. Wells, Cashier.
T. A. Stoutenburgh, Vice-President.

New York State Bank.

J. B. Plumb, Cashier.
R. H. King, Pres.

New York Security Bank.

L. D. Taylor, Cashier.
A. Hunt, President.

N. Y. Traders' Bank.

J. M. Pinckney, President.

Northern Canal Bank.

W. L. Shardlow, Jr., Cashier.
C. Rahn, President.

THE AUTOGRAPHICAL COUNTERFEIT DETECTOR
FIFTH EDITION — 1853

ALABAMA–ARKANSAS–CANADA–CONNECTICUT. 7

Rules to be observed in Bank Note List.

Our quotations at the end of the line which contains the name of the Bank, are in double columns; "CINCINNATI" is placed over the head of the first column, and "NEW YORK" over the second. All notes bought by our city Brokers, are quoted in the first column. In the second or last column are quoted the rates of exchange on all notes as purchased in Wall street, New York. The Banks are all alphabetically arranged, as also the States

The letter (*D*) indicates the Bank doubtful; the dash (—) that it is not purchased. The

CAPITAL.....500 000

Descriptions of Genuine Vignettes.

1s, Justice with sword and scales; bridge and cars, &c; female bathing on left ....**1s,** (2d plate) Load of cotton; negro man with two baskets of cotton; man on the right....**2s,** Gathering sugar cane, &c ....**2s,** (2d plate) Train of cars and station house; train of cars & bridge on right.... **3s,** Indian hunter hiding behind a rock; two deer feeding, &c....**5s,** Battle of New Orleans....**5s,** (2d plate Three male figures; planter sitting on barrel; blacksmith with anvil and sledge; negro sitting on the ground; steamboat Montgomery, &c....**10s,** Female reclining; eagle on left; cars crossing bridge in the distance....**10s,** (2d plate) Negro men at work in a cotton field; houses in background....**20s,** Liberty and eagle; XX on left....**20s,** (2d plate) Large spread eagle. Amerrican flag, &c, &c....**50s,** Female reclining with liberty pole and cap; shield, scroll, etc....**100s,** Indians in canoe; trees and hills in the distance.

C. NY. S.L

Counterfeits.

5's, altered from the Central Bank of Tennessee; vig battle of New Orleans; the officers' names, J A. Fleming, cashier, and H H Hubbard, president, are different on the genuine

Com. Bank of Alabama, Selma....4 4 5
CAPITAL.....306,500.
[*W J Norris P—W T Hutchett, C.*]

Genuine Vignettes.

1s, Male portrait....**2s,** Two male portraits....**3s,** Three male portraits, same as

and on the lower right corner; an eagle between the signatures

10's—Parliament is spelled Parliment.

Bank of Toronto, Toronto........1¾ 1 2⅜
[*J G Chewitt, P—A Cameron, C.*]

Banque de Peuple, Montreal,.....1⅜ 1 2⅜
[*L M Viger, Pre., B H Le Moins, Cash.*]

B'k Des Trois Rivieres, Three Rivers, [illegible]

Bank of Upper Canada, Toronto, 1⅜ 1 2⅜
[*W. Proudfoot, Pres. T G Ridout, Cash.*]

Counterfeits.

1s, vig. a bee-hive—the true 10s have for a landscape view.

10s., let C—close imitation—Nov. 1st, 1830—general appearance darker than the genuine, particularly in the foreground of the vig., and the figure X at the bottom.

City Bank, Montreal,.............1⅜ 1 2⅜
[*W. Workman, Pre., F McCulloch, Ch.*]

Counterfeits.

10's, the word "Parliament" on lower left corner is spelled wrong.

C NY. S.L

Commercial Bank, Midland District,
[*C. S. Ross, Cash*] Kingston....1⅜ 1 2⅜

Descriptions of Genuine Vignettes.

5s. Two females seated supporting 5; two cupids in background....**5s.** (2d plate Females seated in 5; fruits at her feet.

Counterfeits.

☞ Beware of notes purporting to emanate from the Foreign and Domestic Exchange, of New York.

2's, the words COMMERCIAL and KINGSTON are written with a pen, and they read for the Foreign and Domestic Exchange

10s, and **20s**—vig. suspension bridge. **5s,** vig suspension bridge—female, anvil and hammer on right, Clifton House on left.

CONNECTICUT.

☞ All banks in good standing are from 2 to 5 per cent. discount.

Bank of Commerce, N London, par ¼ 1
[*A. Banes, Pres., C. Butler, Cash.*]
CAPITAL.....200,000.

Descriptions of Genuine Vignettes.

1s, Ship carpenter at work; view of city....**2s,** Large ship and other vessels upon the ocean....**3s,** Girl seated with basket of corn; and view of village and river....**5s,** Two train of cars, one passing over bridge in distance....**10s** Whaling scene....**50s,** Female seated in ornamental die; die, vases, &c., on left; bale of goods, anchor, wand, quadrant, on right....**100s,** Female portrait

LORD'S DETECTOR AND BANK NOTE VIGNETTE DESCRIBER
SEPTEMBER 15, 1857

44

NEW YORK STATE.

Merchants' & Mechanics' Bank.—Syracuse.

E. T. Lathrop, Cashier — I. Smith, President.

Merchants' & Mechanics' Bank of Troy.

T. Taylor, Cashier. — D. T. Vail, President.

Middletown Bank.

W. M. Graham, Cashier. — Joseph Davis, President.

Mohawk Bank.

N. Switz, Cashier. — D. L. Campbell, President.

Mohawk Valley Bank.

F. E. Spinner, Cashier. — B. Carver, President.

Montgomery County Bank.

Ed. Wells, Cashier. — T. A. Stoutenburgh, Vice-President.

New York State Bank.

J. B. Plumb, Cashier. — R. H. King, Pres.

New York Security Bank.

L. D. Taylor, Cashier — A. Hunt, President.

N. Y. Traders' Bank.

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Northern Canal Bank.

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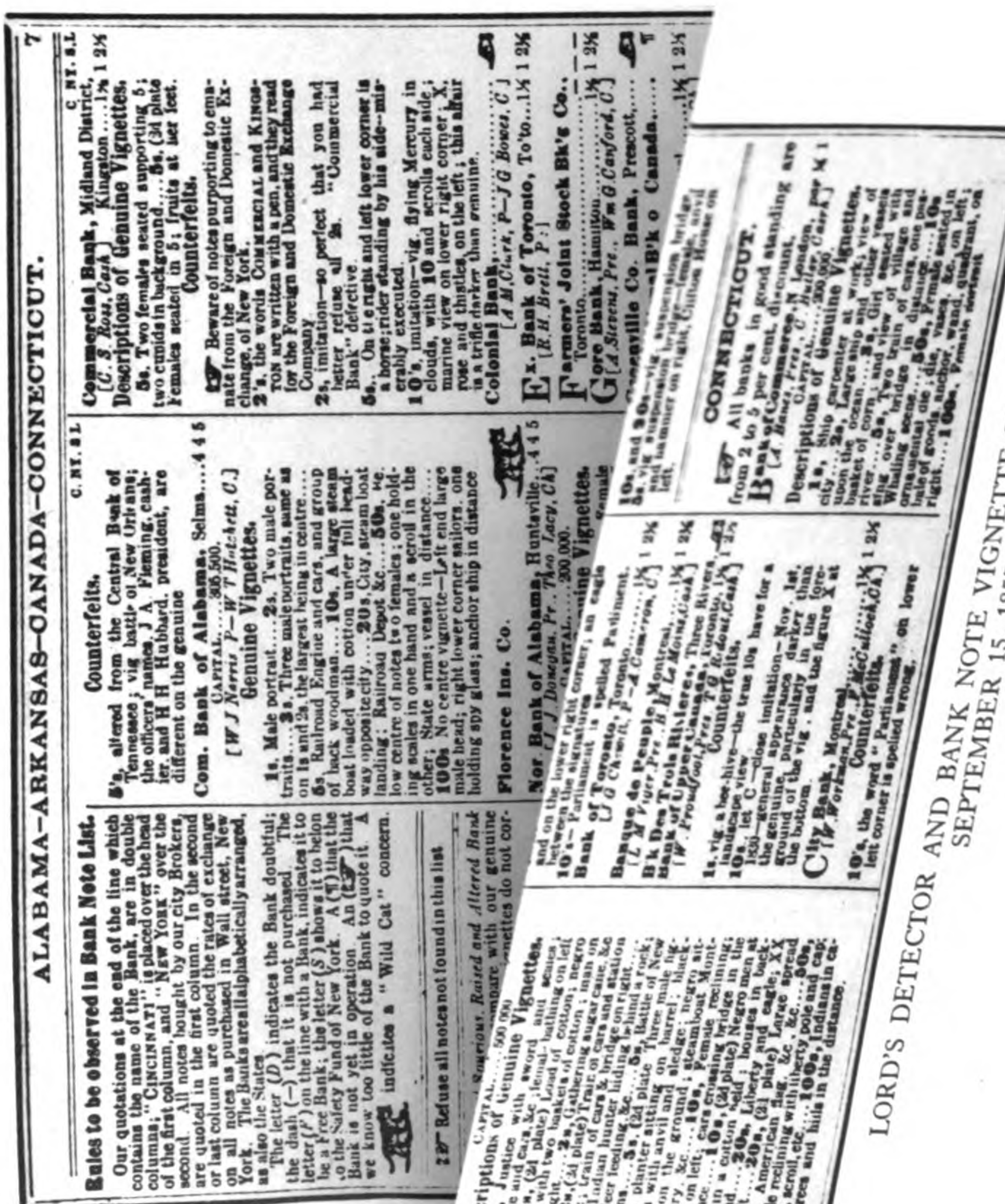

ALABAMA–ARKANSAS–CANADA–CONNECTICUT. 7

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The letter (D) indicates the Bank doubtful; the dash (—) that it is not purchased. The letter (F) on the line with a Bank, indicates it to be a Free Bank; the letter (S) shows it to belong to the Safety Fund of New York. A (¶) that the Bank is not yet in operation. An (☞) that we know too little of the Bank to quote it. A [wild cat cut] indicates a "Wild Cat" concern.

☞ Refuse all notes not found in this list.

Counterfeits.

5's, altered from the Central Bank of Tennessee; vig battle of New Orleans; the officers' names, J A Fleming, cashier, and H H Hubbard, president, are different on the genuine.

Com. Bank of Alabama, Selma....4 4 5
CAPITAL......305,500.
[W J Norris, P—W T Hatchett, C.]

Genuine Vignettes.

1s, Male portrait....2s, Two male portraits....3s, Three male portraits, same as on 1s and 2s, the largest being in centre.... 5s, Railroad Engine and cars, and group of back woodman....10s, A large steam boat loaded with cotton under full headway opposite city....20s, City, steam boat landing; Railroad Depot &c....50s, Below centre of notes two females; one holding scales in one hand and a scroll in the other; State arms; vessel in distance.... 100s No centre vignette—Left end large male head; right lower corner sailors, one holding spy glass; anchor ship in distance.

Florence Ins. Co. [wild cat cut]

Nor. Bank of Alabama, Huntsville...4 4 5
[J. J. Donegan, Pr., Theo Lacy, Ch]
CAPITAL......200,000.

Commercial Bank, Midland District, Kingston....1½ 1 2½
[C. S. Ross, Cash]

Descriptions of Genuine Vignettes.

5s. Two females seated supporting 5; two cupids in background....5s, (3d plate Females seated in 5; fruits at her feet.

Counterfeits.

☞ Beware of notes purporting to emanate from the Foreign and Domestic Exchange, of New York.

2's, the words COMMERCIAL and KINGSTON are written with a pen, and they read for the Foreign and Domestic Exchange Company.

2s, imitation—so perfect that you had better refuse all 2s. "Commercial Bank" defective.

5s,. On the right and left lower corner is a horse; rider standing by his side—miserably executed.

10's, imitation—vig. flying Mercury in clouds, with 10 and scrolls each side; marine view on lower right corner; X, rose and thistles, on the left; this affair is a trifle darker than genuine.

Colonial Bank,............
[A M Clark, P—J G Bowes, C]

Ex. Bank of Toronto, To'to...1½ 1 2½
[R.H. Brett, P.]

Farmers' Joint Stock Bk's Co., Toronto.......... — — —

Gore Bank, Hamilton.............1½ 1 2½
[A. Stevens, Pres., Wm G Canford, C.]

Descriptions of Genuine Vignettes.
1s, Justice with sword and scales; bridge and cars, &c.; female bathing on left ....1s, (2d plate) Load of cotton; negro man with two baskets of cotton; man on the right....2s, Gathering sugar cane, &c ....2s, (3d plate) Train of cars and station house; train of cars & bridge on right.... 3s, Indian hunter hiding behind a rock; two deer feeding, &c....5s, Battle of New Orleans....5s, (2d plate Three male figures; planter sitting on barrel; blacksmith with anvil and sledge; negro sitting on the ground; steamboat Montgomery, &c....10s, Female reclining; eagle on left; cars crossing bridge in the distance....10s, (2d plate) Negro men at work in a cotton field; houses in background....20s, Liberty and eagle; XX on left....20s, (2d plate) Large spread eagle, American flag, &c., &c....50s, Female reclining with liberty pole and cap; shield, scroll, etc....100s, Indians in canoe; trees and hills in the distance.

Bank of Toronto, Toronto.........
[J G Chewett, P—A Cameron, C]

Banque de Peuple, Montreal.......1½ 1 2½
[L M Viger, Pre., B H Le Moine, Cash]

B'k Des Trois Rivieres, Three Rivers,

Bank of Upper Canada, Toronto, 1½ 1 2½
[W. Proudfoot, Pres., T G Ridout, Cash]

Counterfeits.

1s, vig. a bee-hive—the true 10s have for a landscape view.

10s, let C—close imitation—Nov. 1st, 1850—general appearance darker than the genuine, particularly in the foreground of the vig., and the figure X at the bottom.

City Bank, Montreal..............1½ 1 2½
[W. Workman, Pre., F McCulloch, Ch.]

Counterfeits.

10's, the word "Parliament" on lower left corner is spelled wrong.

Gananoque Co. Bank, Prescott,....

.........B'k o Canada.............. ¶

.........1½ 1 2½

CONNECTICUT.

☞ All banks in good standing are from 2 to 5 per cent. discount.

Bank of Commerce, N London, par ½ 1
[A. Banes, Pres., C. Butler, Cash.]
CAPITAL......300,000.

Descriptions of Genuine Vignettes.

1s, Ship carpenter at work; view of city....2s, Large ship and other vessels upon the ocean....3s, Girl seated with basket of corn; and view of village and river....5s, Two train of cars, one passing over bridge in distance....10s Whaling scene....50s, Female seated in ornamental die; die, vase, &c. on left; bale of goods, anchor, wand, quadrant, on right....100s, Female portrait

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D. L. Campbell, President.

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F. E. Spinner, Cashier.

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New York State Bank.

J. B. Plumb, Cashier.

R. H. King, Pres.

New York Security Bank.

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A. Hunt, President.

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J. M. Pinckney, President.

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W. L. Shardlow, Jr., Cashier.

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[*L M Viger, Pre., B H Le Moine, Cash.*]

B'k Des Trois Rivieres, Three Rivers, —

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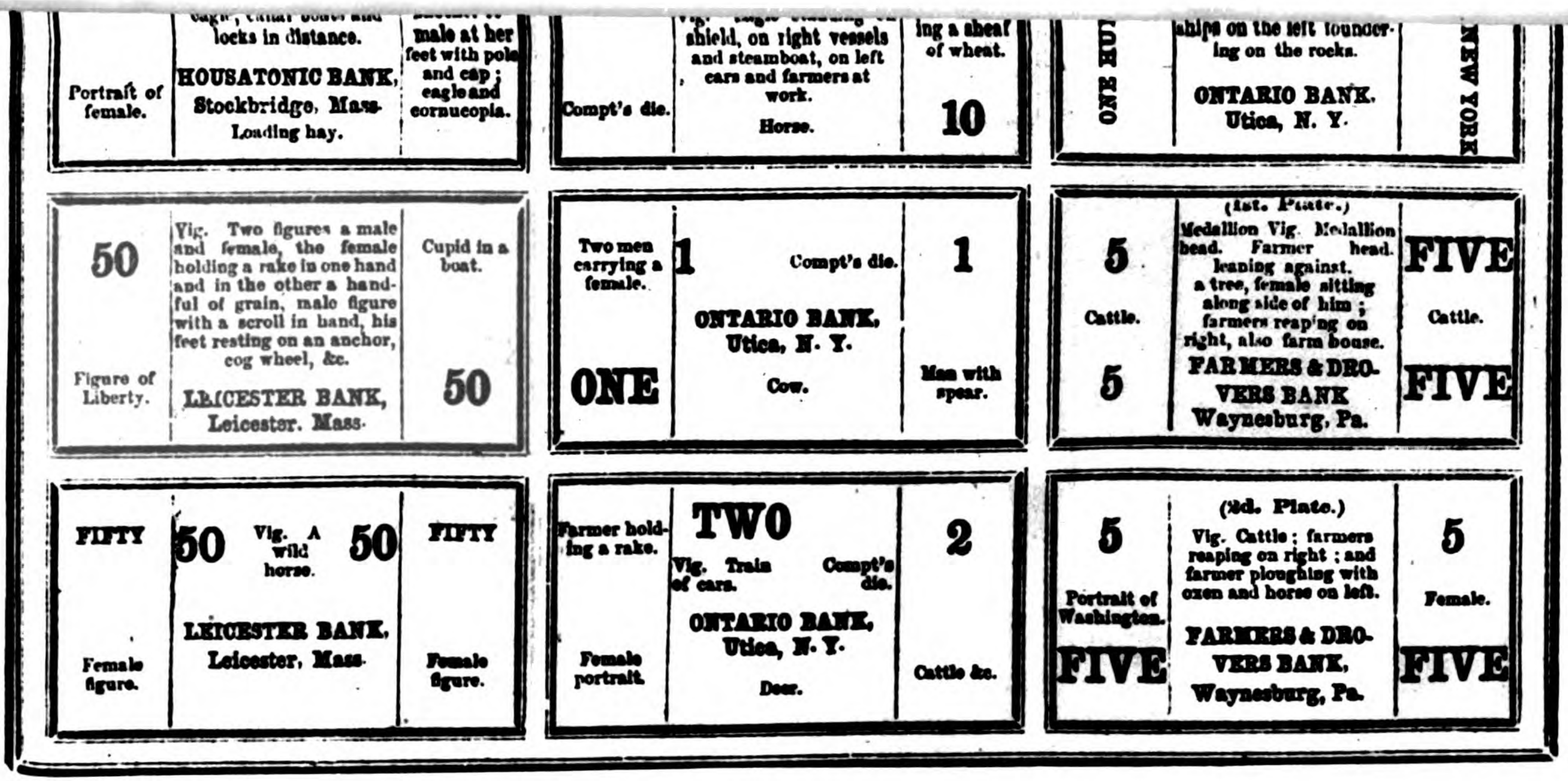

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